Building Services News

Volume 23 | Issue 1 Article 1

1-1-1984

Irish H & V News

IRISH H&V NEWS

JANUARY 1984

APPOINTMENT

● Tom Kirrane, B Comm, AICCI, AITIM, M Inst Pet, has been appointed Managing Director of Atlas Oil, the Irish-owned industrial oils importer and blenders. Atlast operates small refineries at Portlaoise and Armagh.

From Out of the Ashes . . .

Gaelwood and Conserva – two names which looked like being lost to the industry – have been dramatically saved and are now as readily available as ever from a new company called Multiheat Products Ltd. Even more heartening is the fact that joint directors – Michael Walsh and Derek Morris – were the original directors of Multifuel when first formed nearly 10 years ago.

The demise of Multifuel was the result of other mitigating circumstances and, it has been said, was not caused by poor performances by either management or the products involved. When put into liquidation in December, Multifuel owed in the region of £300,000 to creditors. However, according to the various statements made available, 90% of this was due to shareholders of the company.

Keenans of Bagnelstown,

● Continued on page 4

COMPLETION OF FIRST TWO MAJOR SPUR LINES LEAD TO . . .

Connection-Related Works Bonanza

With two of the major spur lines into new areas almost completed by New Dublin Gas, the industry stands by with bated breath as the long-awaited work-bonanza begins to materialise.

At the time of writing the Belgard and Clondalkin lines were nearing completion while work on the Tallaght section is scheduled to commence some time in March.

In all, there are currently eight major spur lines on the drawing board, the additional ones being for Castleknock; Coolock; Santry; Kylemore Road; and Dublin 4, where it is more a question of replacing the existing spur.

However, connections have been continuing at a significant rate with over 200 new subscribers in the industrial/commercial sector while the decline on the domestic front of the last 10 years has been turned around.

Of late there has been a great deal of discussion on the connection charges being asked of new subscribers but a spokesman explained that discrepancies in similar regions are caused by the re-instatement charges.

New Dublin Gas makes its connection, fills in afterwards and then lets it rest with Dublin Corporation whose responsibility it is to re-instate the pavement or road. However, New Dublin Gas is billed for the cost of this work which varies according to the surface involved.

Charges to Dublin Gas are £94.40 per sq m for bitumen; £75.10 per sq m for cement; and £104 to £183 per sq m for paving slabs and flag stones. Alltogether, there are something like eight different charges.

On the question of the cost of gas itself, the company's plans are to hold the price at 1983 levels right through 1984 which, taking an inflation rate of approximately 10%, effectively means a price reduction.

However, the total financial package for New Dublin Gas has yet to be formally ratified but it is anticipated that an EGM will shortly be called to do just that.

IDHE Dinner

The Institute's Annual Dinner will take place on 17 February at Jury's Hotel, Dublin. Places are limited so please contact Katrina McTernan at Tel: (01) 945257 immediately, if interested.

Pipework & Drainage: This month's product review on pipework and drainage suggests that now is the time for a fresh look at the design requirements of this important market sector.

RTE Slates Advisory Service

"This is one consumer service the consumer can do without," said RTE's Public Account programme recently of the Coal Advisory Service.

In what was a strong criticism of the service based on a single incident, the programme presenters were obviously unimpressed by the advisory service's unwillingness to accept responsibility for its list of contractors and the apparently faulty findings of its recommended examiner.

The problem concerned a householder who had used a contractor on the Coal Advisory Service list for an installation that failed to heat properly. A consultant suggested by the service then failed to find faults in the system that an indepent survey subsequently turned up.

Then, when the householder went to have the system put to rights by the original contractor – Skerries Heating – he found that the company had gone out of business.

What surprised Public Account and drew the censure of the advisory service was the policy of refusing to accept any responsibility for either its nominated contractors or consultants.

https://arrow.tudublin.ie/bsn/vol23/iss1/1
DOI: 10.21427/D7FD6N

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IRISH H&V NEWS
IRELAND'S BUILDING SERVICES MAGAZINE

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Subscription Rates: One year £18
Printing by: Mercury Print Ltd, 5/7 Main St, Blackrock, Co Dublin.

Irish Heating & Ventilating News circulates to key executives in the heating, ventilating, air conditioning, refrigeration, sanitaryware, plumbing and environmental control industries. Its circulation also includes energy managers, architects, designers, sanitary engineers, and environmental engineers in the 32 counties of Ireland.

ABC

Glow-Worm Trip ... All Revealed

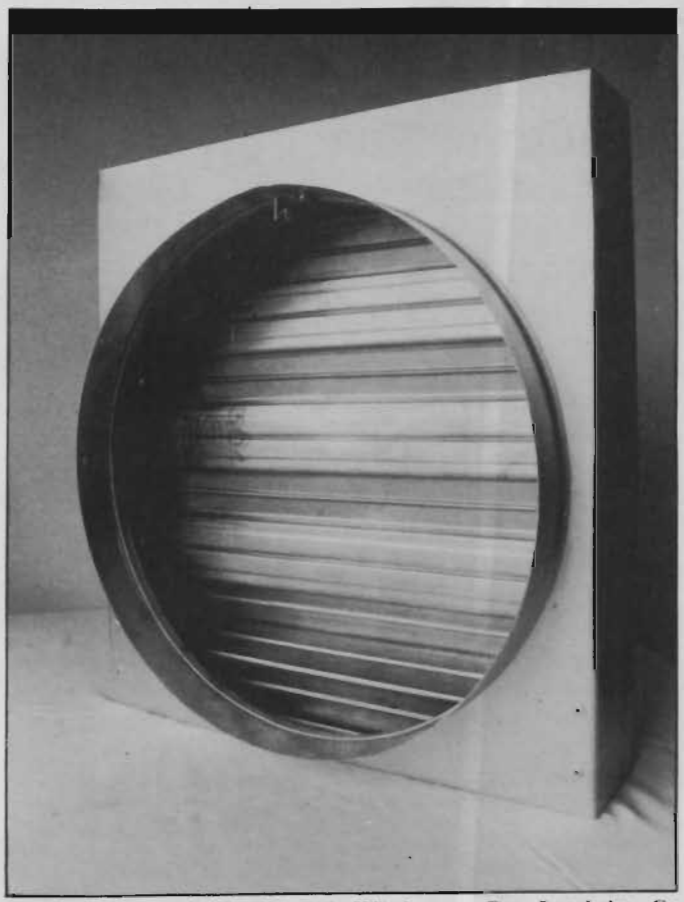
You can put away the compasses chaps and the maps and leave it all to Glow-worm. They've announced the destination of their '84 Mystery Trip for Contractors from the UK and Ireland. . . it's on the West Coast of America. . . yes, San Diego, not from the Mexican border.

Chilly it is not. Warm and relaxing it certainly is. You can bathe and bask in the balmy Pacific Ocean. For those who prefer something rather more stimulating. . . you can try your hand and your legs at deep sea fishing, wind sailing, yachting and for the really daring, visit the killer whales in San Diego's renowned Marine World or enjoy a tour around the local Safari Park.

There is also a choice of no less than 76 superb courses on which to practice your "bermuda grass" woods and long irons.

But before you rush to polish your clubs in readiness, remember that you can only qualify (if you haven't already) for this unforgettable Glow-worm holiday by ordering 130 Glow-worm boilers (30 of which must be free-standing).

Irish Made Fire Dampers



● Sandford Engineering Co Ltd, Kill Avenue, Dun Laoghaire, Co Dublin are now manufacturing curtain type fire dampers — fire resistance tested in accordance with BS 476: Part 8 1972 and the International Standard ISO 834: 1975 and assessed by the IIRS. Sizes range from 150 mm x 150 mm to 1000 mm x 1000 mm or any size can be supplied to suit architectural requirements, including circular type. Duct connections to suit flanged joints, slipped joints or spiral ducting. These are the first Irish-made fire dampers and are registered under the trade mark "TIFEU". They are readily available ex-stock or a maximum of two days delivery.

EMA SPRING PROGRAMME

Details of the forthcoming Energy Management Association meetings for the next few months are as follows:

Eastern Region — Dublin: 6 March, Jury's Hotel, 2.15 pm. Natural Gas — (1) "Dublin City Conversion Programme" by G K Little, Manager of Distribution, New Dublin Gas Co; (2) "Code of Practice for Gas Installations" by Mr C Davies, IIRS, Dublin; (3) "Economics of Gas Conversion" by T O'Leary, Applications Engineer, New Dublin Gas Co.

Southern Region — Cork: 8 March, IIRS, 2.15 pm. Instrumentation — (1) "Automated Energy Mangement" by Mr Tony Donnelly, Aran Systems; (2) "O_2 Trim Control" by Mr M Little, Westinghouse Electric Ltd.

Mid-Western Region — Limerick: 5 April, Limerick Inn 2.15 pm. CHP Systems — (1) "Combined Heat and Power — A Case History" Guest Speaker; (2) "A Gas Based CHP System" by Pat Fleming, IIRS, Dublin.

Details on all are available from Harry Pattison, EMA National Organiser, IIRS, Ballymun Road, Dublin 9, (Tel: 370101).

● Ed Wheeler, Managing Director, Benchmark Ltd who has been elected Chairman of the Irish Computer Aided Design Association. The Irish Computer Aided Design Association was recently inaugurated to promote wider applications of CAD systems in the Irish market.

New Short Technical Course Programme

The Dublin Institute of Technology have established a new Short Course Centre in association with their School of Management Studies College of Commerce, Rathmines.

This Centre is opening to provide a new service to industry of short technical courses to up-date and extend the knowledge of existing personnel in industry.

The preliminary programme for this new centre contains twenty-four courses in — Electronics, maintenance, safety and quality which include the following — operation and maintenance of hydraulic systems; computerised maintenance management; introduction to thyristor control; advanced microprocessors for technical staff; noise in industry; and quantitative techniques in quality assurance.

Courses will be staffed by lecturers drawn from the six Colleges of the Dublin Institute of Technology. These Colleges, between them, now have over 1,500 lecturing staff (wholetime and part-time). They are involved in the latest developments in technology and business methods, maintaining their committment to industrial and economic developments in the country.

The expertise of staff involved in the latest developments in technology will thus be available to industry through this short course centre.

Details of the preliminary programme for the centre are available from Course Organiser: P E Laverty at Tel: 967508/970666 or Telex 91006.

DOI: 10.21427/D7FD6N

BRIEFLY. . .

● **Guide to one-valve commissioning:** Hattersley Newman are soon to make available a 20-page booklet, entitled "One Valve Commissioning". Written from their practical experience in valve design and manufacture, the booklet is expected to be an invaluable reference to a great many people involved in the heating and ventilating industry.

Copies from HNH at Burscough Road, Ormskirk, Lancs L39 2XG.

● **Bartol Ltd:** Following a major re-organisation within Hepworth Plastics Ltd (the Plastics division of Hepworth Ceramic Holdings PLC) a new company, known as Bartol Ltd, has been formed. This new company is as a result of the amalgamation of Hepworth Industrial Plastics Ltd and Bartol Plastics Ltd and has its corporate headquarters in Doncaster, South Yorkshire.

● **Dave Gardner has been appointed Sales Representative with Chloride Shires Ireland. Dave will be servicing the South East region covering counties Wicklow, Wexford, Carlow, Kildare, Offaly and North Tipperary.**

● **Buyers' guide to pumps:** The British Pump Manufacturers' Association announces the availability of the 1984 multi-language edition of its Buyers' Guide to Pumps. The format of this edition, newly devised by representatives from the association's commercial, marketing and technical committees, embraces an illustrated listing of principal pump types; a compendium of manufacturers' products detailing material specifications, discharge diameters, heads, flow rates and types of drive; a guide to pump applications; and a guide to couplings and seals. Copies of the guide may be obtained free of charge from the British Pump Manufacturers' Association, 3 Pannells Court, Chertsey Street, Guildford, Surrey, GU1 4EU.

● **Apex Fire Prevention announce the appointment of Stephen Byrne, F.I.F.P.O. as Manager of their Technical Services Division — a newly-formed Division within the company.**

● **Tool dispensers from Ridgid:** Ridge Tool (UK) has just introduced a range of three tool dispensers for use in sales outlets. Designed to fit any size selling or display area, there is: a counter display for wrenches; a wall "hang-up" for small tools; and a large free-standing unit for combinations.

Burmah Among Pace Setters

When we took a look last issue at the various selling incentives being adopted by the fuel interests in the domestic heating market we should have said that Burmah-Castrol (Ireland) Limited were among the pace setters in a number of the areas reported. The marketing experience of Martin Carroll there saw Burmah-Castrol score an early success for the formula of accepting orders against a bank account reference and of year-to-year arrangements.

From Out of the Ashes

● Continued from cover

which itself went into liquidation shortly before Multifuel did, had a 50% holding in the company. Approximately 25% was held by Merchants Warehousing Ltd while the remainder was owned by founders Derek Morris and Michael Walsh.

These two, who retain the patent rights, recently formed Multiheat Products Ltd and, at the time of going to press, were deep in the throes of getting both Conserva and Gaelwood back on the market.

Limited supplies were already available but, by the time you read this, a manufacturing arrangement with Kunzel of Limerick (who originally made the products) will mean that any quantities can be provided.

Derek Morris told *H&V News* that both he and Michael were eternally grateful to suppliers and customers alike who had supported them throughout the Multifuel demise and who were equally forthcoming with encouragement and assistance for the Multiheat Products venture.

Multiheat have already taken over the lease of the James's Street premises formerly occupied by Multifuel and have also bought over the various pieces of machinery and office equipment. At the time of writing a bid was also in for the complete stocks of the company but Derek Morris had heard nothing at the time. However, he was quite optimistic that his bid would be accepted.

Initial "home" reaction to Multiheat Products has been exceptional while the export potential also looks good with the recent issuing of UK Coal Board approval of the Conserva.

BEST VALUE IN TOWN

Heatequip Ltd have, over the last few months, established themselves as one of the leading suppliers of gas boilers in Ireland. As agents for Potterton International, they are linked with one of the most respected names for boilers in the country.

Potterton originally made its name in the UK for gas boilers but, when the central heating boom came to Ireland first, it was not gas but oil that dominated. The boiler that many will remember as "the" oil-fired boiler of that time is the BOA range.

The present generation of Potterton boilers are just as reliable but with the added advantage of incorporating new technology controls and design, together with the reliability of cast iron heat exchangers.

Heatequip have recently set up its trade counter and are supplying, not only Potterton products, but almost everything that a heating contractor would need for an installation. As an offer to the trade they are offering very special prices on Coppercraft cylinders, Myson Unit 3 pumps, radiator valves and thermostatic radiator valves.

The offer will only last until the end of February "so", as their publicity blurb says, "if you are looking for the best value in town, call out to Heatequip Ltd at the Eurohaul Centre, Greenhills Road, Tallaght, Co Dublin."

● Potterton Netaheat 10/16 wall hung gas fired boiler.

BAKER'S BLUE — NEW "HIGH ACTIVITY" FLUX

Baker's, manufacturers of the legendary Baker's Fluid, are introducing an entirely new "high activity" flux that does not gall. To achieve instant recognition both within the trade and "on the joint", the new product will be blue and known as Baker's Blue. Its attractive colours and distinctive texture are derived from an animo-copper formulation which will assist plumbers to see and remove excess flux particularly at low levels. It will prevent mould growth if there has been a delay in flushing-out after jointing in potable water systems.

Baker's Blue will fulfil a need for a flux with a longer active life in joints that are not heated at once. The introduction of the more active ingredients means that self-cleaning will not commence until heat is applied. Then a dramatic change results in the brightening of tarnished copper allowing the solder to flow freely.

Tests show that high-activity, Baker's Blue has a strong tendency to pull solder into capillary joints — particularly where end-feed fittings are employed.

Baker's Blue is ideal for copper and brass but will be equally effective on mild steel and some grades of stainless steel. Normal flame heating can be used for capillary fittings, but for general work, soldering irons, oven soldering and electrical heating methods are recommended.

Baker's Blue contains no free acid so plumbers will welcome the absence of flux fumes and smell.

● Baker's Blue — A new "high activity" flux for plumbers.

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DOI: 10.21427/D7FD6N

The 'Upside-Down' Roof

An "upside-down" roof design has been used on a low energy office development for New Ireland Insurance Company and Industrial Credit Company at Wilton Place, Dublin.

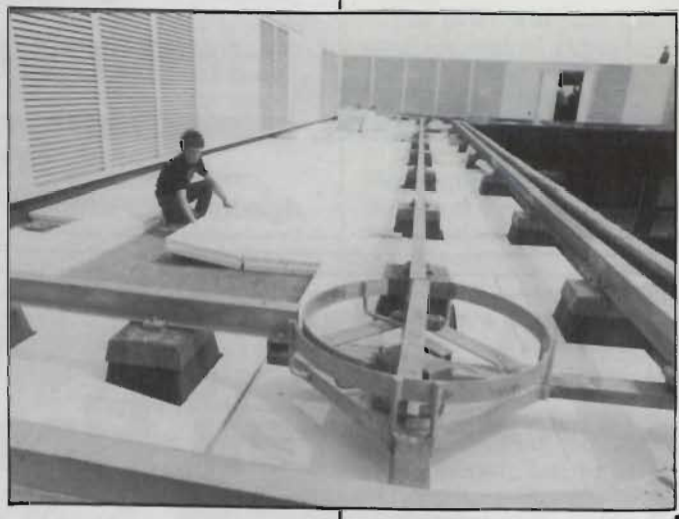
Designed by Dublin architects Tyndall, Hogan and Hurley, the flat roof uses Roofmate insulation from Dow Chemical to help protect the waterproof membrance against thermal shock.

A 26mm 'in situ' concrete roofing slab has been covered with 100mm of screed and two layers of 10 mm mastic asphalt. The asphalt is protected by 10 mm of Roofmate SL-grade extruded polystyrene foam insulation boards, kept in place by 75 mm of ballast.

The high insulation value of Roofmate has allowed the roof to exceed the 0.4w/m^2k - U value specified in Building Regulations. Roofmate has a high resistance to water absorbtion which allows it to provide effective thermal insulation for the lifetime of the building.

The building at Wilton Place will be one of the most energy-efficient office developments in the country. All windows are double-glazed and the architects have designed the structure of the building to have a high thermal capacity for heat retention.

The seven-storey building is heated by electro-boilers working at night from off-peak electricity. There are oil-fired units to top up heat levels if necessary during the day.



Contractors John Sisk and Son Ltd will soon finish work on site after starting in November 1981.

Roofmate is a part of the Styrofoam Plan which gives details of the complete range of Styrofoam extruded polystyrene foam products and recommends grades of insulation for roofs, walls, floors and underground.

● 10mm Roofmate SL-grade extruded polystyrene foam insulation boards being applied to the roof of the New Ireland Insurance Company development in Wilton Place, Dublin.

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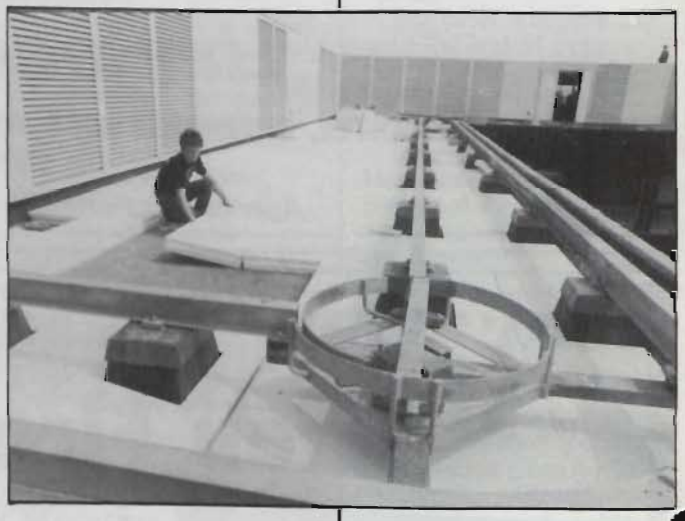

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ULSTER NEWS

Natural Gas Project — Phase One

The International Consultancy Service (ICS), of British Gas Corporation, has been appointed by the Northern Ireland Gas Company to undertake the routing, design, supervision of construction and commissioning of the natural gas pipeline from the Border to Belfast. ICS have extensive experience of high pressure gas pipelines in other parts of the United Kingdom.

Route selection, which will commence immediately, is the first step in this initial phase of the project. Selection of contractors is scheduled for autumn 1984 with the commencement of pipe laying work in Spring 1985. Natural Gas will be supplied to Belfast by October 1985.

William McConnachie, Senior Project Manager (Pipelines), will lead the team and will have overall project management responsibility.

A Northern Ireland Gas Company spokesman said that every effort will be made to maximise local participation in all aspects of the project. "Previous experience with high pressure gas pipelines will be essential in relation to the eventual selection of main contractors and therefore, interested local firms should give consideration to establishing connections with nationally and internationally recognised gas pipeline construction companies. When the main pipeline contractor is selected in late 1984, there will inevitably be sub-contractor involvement for associated work in which local participation will be generated."

The Northern Ireland Gas Company was formed as an executive arm of the Department of Economic Development. It's remit is to carry forward the detailed contractual negotiations for the supply of natural gas from the Irish Gas Board (Bord Gais), to progress the design and construction of the pipeline and to assume responsibility for natural gas marketing.

The engineering and construction related aspects of the natural gas project were discussed at an information seminar organised by

● Michael Warnock who has been appointed Managing Director of the newly-created Northern Ireland Gas Company on secondment from the Department of Economic Development.

the Northern Ireland Gas Company in conjunction with the Industrial Development Board. Local businessmen and other interested parties attended the event which was held on the morning of 17 January at the Culloden Hotel, Craigavon.

One of the main purposes of the seminar was to ensure that Northern Ireland engineering and construction companies are quickly given as much insight as possible into the potential requirements of a project which will extend over a number of years. This initiative, which will give Northern Ireland firms early notice of the work opportunities likely to arise, follows upon the Gas Company's previous statements that every effort will be made to maximise local participation in all aspects of the project.

The main speaker was William McConnachie, Senior Project Manager (Pipelines) of the International Consultancy Service who has been appointed to undertake the routing, design, suprevision of construction and commissioning of the first phase of the pipeline (Border to Belfast). Mr McConnachie has overall project management responsibility. Information was also provided about the eventual programme of work associated with the conversion of distribution systems and consumer appliances.

● Central Merchants Ltd, the Queen Street, Belfast plumbing and builders merchants have shown considerable enterprise in the marketing of modern bathroom equipment.

In their modernised showroom they have installed working hydrotherapy systems including a jacuzzi model which can be tried out by potential customers. It is hoped that this form of demonstration will lead to an increased interest in modern equipment.

● NI Gas Co Ltd, the management company formed to bring Kinsale Gas north has moved into its new offices at RAC House (3rd floor), 29 Chichester Street, Belfast (Telephone Belfast 23000).

● Mr Terry Jackson, Chairman of the NI region of the Chartered Institute of Building Services had the pleasure of opening the new Building Services Exhibition at Balmoral.

The exhibition was a new type show with over 100 stands. It was a trade only show, well attended and of course well presented as is usual with a Bill Caughy promotion.

● Over 100 members and guests of the NI Branch of the Chartered Institute of Building Services met for the Annual Dinner of the Branch in the Culloden Hotel.

Mr Terry Jackson, Chairman, welcomed the guests who included a party from the South of Ireland Branch. Other speakers included Mr Willie Andrews of the CIBS and Mr Denis Haslam, President of the Royal Ulster Society of Architects.

● Over 150 members and guests and their ladies met at Newcastle for the Annual Dinner Dance of the NI Master Plumbers Association.

The Slieve Donard Hotel resounded during the evening to the usual sounds to be expected from a large number of people thoroughly enjoying themselves.

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DOI: 10.21427/D7FD6N

● CIBS Dinner: Dr D S McIlhagger with Terry Jackson (NI Chairman); D Haslam, President, RUAS; and W Andrews, (NI-CIBS).

● John Parker, Managing Director and Chief Executive of Harland & Wolff Ltd welcomed a large number of guests to the first open day of the Engineering Division of the company.

During the visit Mr Parker announced that the company would shortly announce its plans for building "package power stations" and that talks were proceeding with the Northern Ireland Electricity Service as a result of which they could be producing a new range of electrical products.

● Glen Electric of Newry have announced that they will be producing a new range of products to add to their well known Glen-Dimplex range, as a result of which additional employees will be recruited.

● Eric McBride, Chairman of the NI Energy Mangers Group welcomed Mr Alan Butler, MP, Minister of State and his Parliamentary Secretary Mr G Wolfson MP to the first meeting of the Group for the new session.

Guests also included Mr G Loughlin, Assistant Secretary and Mr D Noble, Energy Efficiency Officer of the Department of Economic Development.

In his address Mr Butler spoke of the importance of energy conservation and the efforts of his Department to provide NI consumers with a wide range of fuels.

● Secretary of State Mr James Prior, MP, was among the guests welcomed by Mr W Devlin, Chairman of the Coal Advisory Service at a special dinner in the Dunadry Hotel to welcome Mr Ian McGregor, Chairman of the National Coal Board. During a two day visit to the Province Mr McGregor met and toured with representatives of the Coal Importers & Distributors.

INTERBUILD '83 PRODUCT REVIEW

Interbuild '83 held at the National Exhibition Centre, Birmingham, from 27th November - 3rd December, was attended by 151,406 visitors, of whom 12,608 had professional qualifications and 24,730 were purchasers of heating and ventilating products.

Here, *H&V News* reviews products launched at the exhibition.

Mauri Bathroom Furniture

Designed by Mauri of Milan, Mauri bathroom furniture modular units are constructed of a resin impregnated material and incorporate drawer systems, cupboards and hideaway toothbrush rings, together with mirror and lights.

The working surfaces utilise quality Mauri tiles of a high acid resistant material and will appeal to hospitals, hotels and clubs, as well as for home use. The tiles are crack resistant due to high temperature firing and quality enamelling.

Mauri tiles are available in seven special sizes: 300 mm x 300 mm for floors through to 7.50 mm x 7.50 mm narrow tiles. The tiles come in three finishes — gloss, satin and matt. A range of colours includes "Slate Grey", a new introduction which combines well with the Red and Rose Pink tiles.

Mauri has also introduced chrome and coloured strips, which can be fitted between the tiles, creating a continuation line from floor, wall and modular units, thus ensuring total continuity.

Details from Mauri Systems, 157-158 Sloane Street, London SW1X 9BT, England, (Tel: 031-730 9125, Telex: 896691).

Plum-In Trade Connectors

Uni-Tubes launched "Plum-In Trade", new plumbing connectors which comprise a length of the now widely used Copperbend, hand bendable corrugated copper pipe, together with a special, integral lead-free solder-ring end fitting.

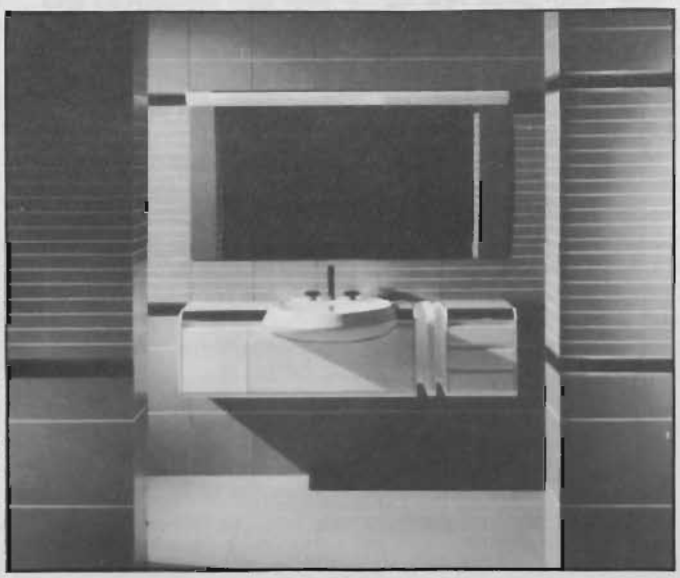
The system eliminates the need for additional capilliary fittings or compression joints and allows the pipe section to be connected directly on to existing pipe work with the minimum of fuss.

Formed from high quality, corrugated copper pipe, to Table X Standard, Plum-In Trade copperbend is a robust, highly versatile plumbing connector which can be bent cold, by hand in any direction, and which is easily connected to conventional fittings.

Supplied complete with plain ends or tap connector fittings and in a comprehensive range of lengths and diameters, Plum-In Trade copperbend is now the fastest way of connecting pipes and taps. It is especially invaluable where access is pure or where pipes must bend twice in confined spaces.

Details from Plum-In Trade, Uni-Tubes Ltd, 189 Bath Road, Slough, Berks SL1 4AR, England (Tel: 030753 34931, Telex: 848347).

● Contourail shower curtain rail can be curved or bent into a required shape without effort or special tools, without distorting the track or alloy enclosure. Easily fixed to the wall and with the addition of a support rod which suspends from the ceiling, the rail will stay firmly in place, allowing the curtain to glide smoothly around corners or along curves. All fittings and instructions are contained in the "take-home" pack. The product is distributed by Jendico of Leicester (Tel: 030533 386278).



● Modular bathroom furniture from Mauri Systems.

● The rib-patterned and slip-resistant standing surface, and the integral panel can be clearly seen in this new 900 x 900 mm corner shower tray from Ideal-Standard.

new products at INTERBUILD

Corner Show Tray

A 900 mm x 900 mm ceramic shower tray — to add to their existing range of three acrylic trays — was among the products of Ideal-Standard. Other new items were a gold finish for selected ranges of their bathroom brassware and a semi-countertop basin, while products making their exhibition debut (although previewed earlier) included a whirlpool system, a bath, a wash basin and a twin flow wash basin mixer.

The ceramic shower tray, for which Showerlux have developed a matching shower cubicle, has a rib-patterned slip-resistant finish to the standing surface and an integral panel. It is supplied with a waste fitting, and the trap may be accommodated in the floor or by mounting the tray on a raised plinth.

Existing Ideal-Standard acrylic shower trays are in three different sizes — 800 x 800 mm; 750 x 750 mm, and 700 x 700 mm — each with a different and distinctive interior shape. All four models are available in the full range of Ideal-Standard's

https://arrow.tudublin.ie/bsn/vol23/iss1/1
DOI: 10.21427/D7FD6N

new products at INTER BUILD

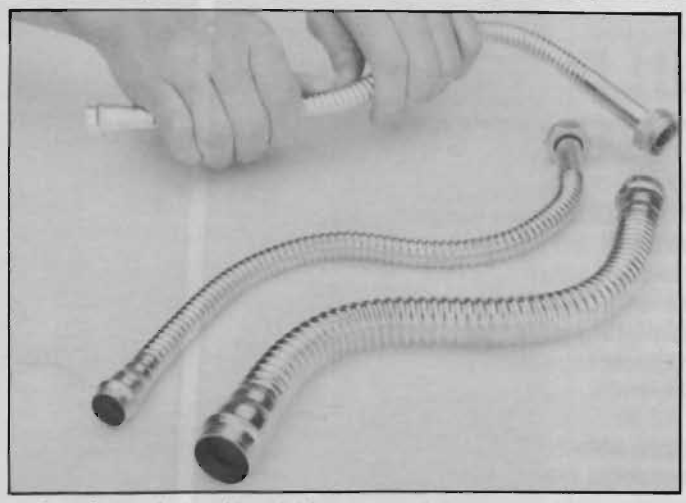
colours.

Dawn Gold is a new finish which Ideal-Standard are applying to their range of Jetline bathroom brassware and Idealblend range of single lever shower mixers. Extensive metallurgical research was undertaken to complete the development of the Dawn Gold finish which is a combination of gold and new hard-wearing alloys. Dawn Gold represents a real gold-plated surface — not a lacquer like some finishes used on bathroom brassware — and will replace the more expensive Karatclad gold plating previously applied to Jetline and Idealblend. However, the Karatclad finish — a hard-wearing cobalt-strengthened gold — will continue to be used for Ideal-Standard's ranges of Monolux, Dualux and Idealmix ranges of brassware.

Ideal-Standard's Michelangelo range has been extended by the introduction of a semi-countertop basin (650 mm wide x 540 mm projection).

Their patent-applied-for development of the Whirlpool 2000 system is factory fitted and tested on eight models of their acrylic baths.

A longer (1,800 mm long x 800 mm wide) bath has been added to the Linda bathroom suite. It includes all the special design features of the smaller Linda (1,700 mm x 800 mm) model, including distinctively shaped back rests at both ends — so two can bathe in comfort together — and a centrally positioned bath filler and waste. In fact, the new and longer Linda bath offers deep and luxurious bathing where bathroom space is not quite so limited.



● Plum-In Trade hand-bendable copper pipe connectors come in a variety of lengths and diameters and feature a lead-free, solder ring end-fitting designed to make this method the fastest way of connecting up pipes and taps.

The Tulip range has been extended with a 500 mm countertop basin, and a 690 mm wash basin, both with related design features.

Ideal-Standard have also introduced a twin flow fixed spout wash basin monoblock mixer. There are two new Jetline Compact models — one with a pop-up waste and one with a weighted chain for the waste.

Last year a Jetline Compact twin flow bath filler was introduced and the addition of the wash basin mixer means that bathrooms can now be installed with twin flow mixers on both the bath and wash basin with cold water drawn from the mains and hot water from storage. Both the twin flow mixers are totally suitable for use on unbalanced or balanced water systems.

● Whisper Tones from Pilkington's Tiles; two new shades in both Whisper Tones and Echoes are ivory and fawn, co-ordinating with a whole range of the latest sanitaryware colours.

Whisper Tiles New Shades

In recognition of the growing popularity of sanitaryware in the brown-fawn-neutral spectrum, Pilkington's Tiles Ltd has extended its Whisper Tones and Whisper Echoes tile ranges to include Ivory and Fawn. The company is confident these newcomers will swiftly join current favourites pink, green, and blue on the "best seller" list.

Among the Ideal-Standard bathroom suite shades with which these latest tiles might be used are: Sepia, Mink, Kashmir Beige, Whiskey, Indian Ivory, Honeysuckle, Bamboo, Milkwood, Pampas, and Avocado.

Whisper Tones are broadly-striped 6" square (152 x 152mm) tiles, and are supplied in packs of 18. Whisper Echoes feature a feather-edge pattern on a larger 8" x 6" tile (203 x 152mm): supplied in packs of ten. As with the other "sugared almond" shades, the new ivory and fawn colourways can be tamed with Dolphin White wall tiles and complementary Flooring Co-ordinates.

Bathroom Cabinet

A bathroom cabinet launched by Metlex features a shaver socket, digital clock, integral lockable internal cupboard and built-in lighting. The unit is the premier model in the company's new Blue Diamond II range.

The five cabinets in the range are all equipped with drawers and adjustable smoked bronze shelves and available in either silver or gold aluminium finish. The top of the range three-door cabinet measures 1200 x 600 x 200 mm. Similar luxury features to the three-door cabinet have been built into the two-door unit, which measures 800 x 600 x 200 mm. Completing the range is an unlit double door unit and a single door unit available both with and without lighting.

https://arrow.tudublin.ie/bsn/vol23/iss1/1
DOI: 10.21427/D7FD6N

ANOTHER SIDE OF... FRED COONEY

The last few years for the air conditioning business have been tough ones, but for Fred Cooney they have been very satisfying ones. Fred, for those of you who don't know, is Managing Director of the Reconair Group.

Like everyone else Reconair have found the going tough throughout the recession but something has eased the problems — a Digital PDP 11 mini-computer. "The computer gives you the edge when it comes to knowing exactly where your business is going", says Fred. When other companies found the necessary change too difficult to make during recession, Reconair had already adapted and were planning for the next year.

For Fred it was not good enough to get a computer installed and let someone run it, he took the whole operation over himself and with the aid of the Digital distributor got all the necessary programs prepared and in no time at all Fred was a computer convert.

"At first I wanted a computer to solve my accounting hassles, to reduce the amount of administrative paperwork. The initial recommendation given to me was that I should get a micro, as I would be under-utilising a mini with one program, General Ledger. I insisted upon a mini as I saw the potential for growth in my business."

Fred's vision was prophetic. Since October 1980, the date of the PDP's arrival, Reconair has pushed into more sales' areas, expanded its workforce from 20 to 40 and strung on a few fat 'O's to the annual nett profits.

From the meagre position of running a single program 2½ years ago, Fred now has no less than eight programs, and he's still not finished finding further uses for his dynamic little computer. His initial outlay on one program, one printer, two VDU's and the CPU was £27,000. To date, he has paid in excess of £100,000 for software and hardware.

In any terms it's a lot of money, but every penny has been well-spent according to Fred, who recently established Lift Manufacturers Ltd. under the Reconair Group to instal and maintain lifts.

"There are no extra administrative costs in running this other company," he says. "We've got interfacing models for companies. Even with the second company the computer hasn't reached its full capacity for work." Of course, when capacity is reached Fred simply has to buy another CPU and build it into the system in ego-like fashion. The computer also links the two companies through the Data Modem system from Bord Telecom, so that information on either company is available in either office.

His programs, all supplied by Online, a Digital computer distributor, include Accounts Payable, Accounts Receivable, Order Processing, Payroll, Contracts/Services, Bank, Cheque and his first one, General Ledger.

"I'm basically in the business of selling time and equipment, so the additional program followed quite logically as we grew as I saw the advantages of one program dovetailing into another."

Most of the programs, although not written by Fred, have been wholly or partly conceived by him and translated by Online into computer language, although Fred hopes in the near future to be able to write the programs himself, if time allows him.

With so many interlocking programs Fred and his team operate a powerful, watertight ship. Every customer file is logged in the computer's memory together with a record of all service calls, (detailing the who, when, where, why and how much) and at the end of each day a full picture of the company's profit/loss status is obtainable.

Within two days after the end of each month, monthly statements are issued to some 450 customers, a staggering achievement when measured against the seven to eight manual days Reconair used to expend on the exercise in their computerless years.

"All our daily transactions are put straight into the machine. Accordingly, all our sales and servicing are completely systematised. All programmes are automatically interfaced with the profit and loss ledger," Fred says with the smile of a man who has things under control — every day.

Invoices and orders rarely go astray, stock control is a pleasure, while computer-arranged work and holiday schedules lack the human tendency to err. The payroll for 40 workers takes a mere four hours for one person to prepare, whereas a few years ago, when the workforce numbered 20, it required the attention of three people for three days.

"P.60's at the end of the year used to be the bane of my life," declares Fred ruefully. "I used to spend up to a week working on them. Now I trot them off in an hour on the special computer paper supplied by the Tax Office."

Keeping track of petty cash, another boring, wasteful activity, has been obliterated by Fred's intelligent application of software.

"With 40 people we have a lot of petty cash used. Years back, petty cash details had to be hand-written in a ledger and in turn put into the General Ledger. Not any longer. My cheque-printer program streamlines the issuing of money and interacting with the General Ledger program does all the posting. It couldn't be easier."

In these recessionary times chasing money has become a national, albeit neurotic occupation. Does a computer help you chase better? "Definitely," agreed Fred. "My credit controller has a VDU in his office, using the computer as a tool for cash chase. As a tool for this purpose it's quite phenomenal."

The secret of running a computer according to Fred is to push it to its limits and even a bit further, then and only then will you get full benefit of your investment.

Water Bye-Laws Need Updating

In our introductory article last month on the subject of plumbing equipment we took a somewhat light-hearted look at the early days of plumbing systems and mentioned the problems which existed up to the last century with proper sanitation.

There was a terrible lack of understanding when it came to supplying potable water and a good, or a bad example if you prefer, was the Grand Junction Water Co in London who's main water intake was only three miles away from a large sewage outfall. By the middle of the 19th century nearly one in every two children under the age of five living in a large city or town died and no town dweller could ever be really well. Sore throats and fever were very common and, as mentioned last month, Cholera in London brought about the changes necessary to clean up water supplies.

About this time the sand filter was invented and water supplies and drainage took a collective leap forward.

With this background it is easier to see why so much care is taken in the selection of a supply of water, but before the quality of water can be judged, it is just as important to know the quantity available. When you know the quantity you can then decide the degree of treatment necessary to render the water potable.

The critical measurement to be determined is the lowest flow rate and this is done by test pump in the case of a borehole or well and a notch or weir in the case of a river. The best time for such measurement is in September at the end of a dry summer.

In some instances, where a source with a low flow rate has to be considered for a supply, it is normal to impound the source to ensure that there is sufficient supply during a dry period.

Ireland is lucky to have, in theory at least, a good supply of quality water. In fact, it has a per capita water availability of almost 33,000 litres per day giving a margin of 150 times the required supply available taking a daily human allowance of 225 litres per day.

The problem is distribution; Most of the rain falls in the west of the country where the population is at its least and the least rainfall is in the east of the country where the population is at its highest. So consequently, much of the supply of water to the cities, towns and communities on the eastern part of the country have to have their supplies impounded.

Although there have been, and continue to be, many group water schemes undertaken by local communities, the development of water supplies is mostly undertaken by local councils or corporations. It is usually the function of the local authorities' engineer to access the source of supply and the demands for the scheme.

There are many formalities to be overcome between the planning stages and the final "switch on" and it is not uncommon for six or seven years to pass before completion.

When looking at new schemes allowances of 225 litres per head per day for domestic users and between 28 and 112m^3/ha/d for industry are common.

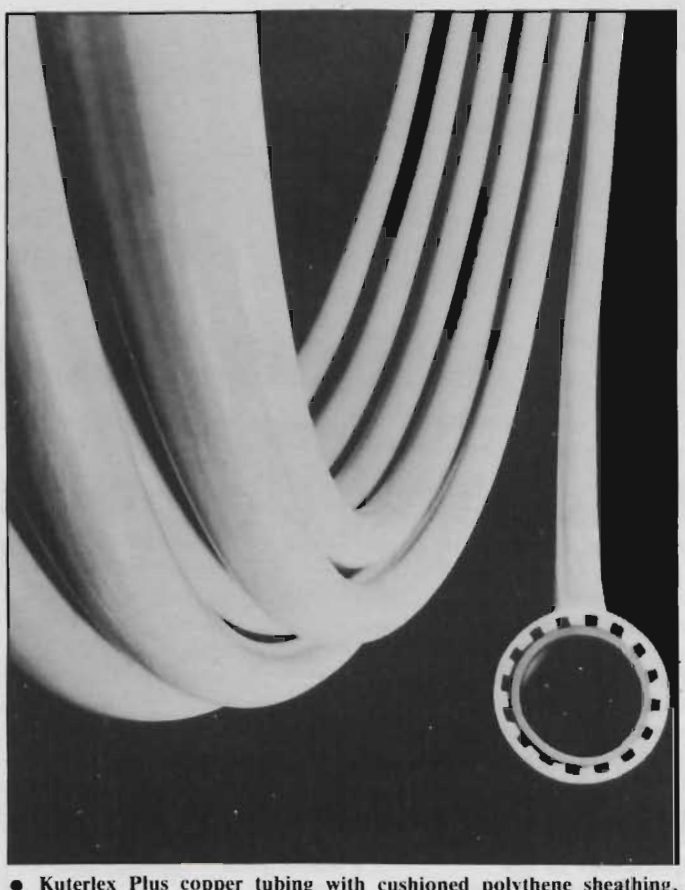
Although the recession has slowed down projects planned over the last few years, as long as the population continues to grow so too will the need for water. Hence the imposition of water rates which hopefully will bring in the necessary finance to keep supply at least up with demand.

From the consumer point of view it would be a good thing if, while imposing a water rate, the Water Bye Laws were up-dated and local authorities could test consumers' water pressure and renew any systems that fail the test. It seems that until this is done water rates will in fact be paying for "waste water" due to leakage.

In 1975 a survey was carried out on 67 public water supply schemes and it was found that 57 of the 67 needed just basic water treatment, ie rapid filtration and disinfection; another five required normal physical treatment, chemical treatment, and disinfection, ie prechlorination, coagulation, flocculation, decantation, and final chlorination; and just five needed intensive physical and chemical treatment, extended treatment and disinfection, ie chlorination to breaking point, coagulation flocculation, decantation, filtration, activated carbon adsorption and ozone final chlorination.

From these figures it can be seen that raw water in Ireland is in general of a high quality of purity, and has no problems meeting the latest EEC standards for drinking water.

Returning briefly to the subject of wastage of water, pH correction is a treatment which can ensure that water is neither corrosive or scale forming. It is especially important where a new supply is to be passed through old cast iron or metal mains, so wastage can be controlled even before the water reaches the fragile metal.



● **Kuterlex Plus copper tubing with cushioned polythene sheathing, which protects the tube when installed in aggressive environments, requires no decoration when surface fixed, and gives good insulation when buried below ground or in screed. Kuterlex Plus is manufactured exclusively by the Copper Tube Division of IMI Yorkshire Imperial Ltd.**

Extensions to Kuterlex Range

The continuing success of Kuterlex, the polythene sheathed copper tube, is reflected in the two latest changes in the standard range.

Following repeated requests for a special size, the manufacturers — IMI Yorkshire Imperial Ltd, Copper Tube Division — have now added a 67mm copper o.d. tube to the standard sizes which now completes the range from 6 mm to 76 mm copper o.d. inclusive.

In addition, and in accordance with the recommendations of the National Joint Utilities Council, the Kuterlex colour range is being extended to include light blue. It has been available as a standard stock item as from 1 January in the tables and sizes currently offered for green tubing.

Kuterlex is British Standard IMI copper tubing sheathed in a continuous seamless polythene and designed for pipelines buried in aggressive soils or within walls or floors made of substances that might attack copper. The Kuterlex range is made to conform to BS 2871:Part I and is available in various sizes in Tables W, X and Y.

The colour range now consists of white for central heating, yellow ochre for gas supplies, as well as light blue and green for water services to match the requirements of different authorities.

The Irish agents are ICI Ireland in Dublin and Bill Allan in Belfast.

However, all enquiries about Kuterlex copper tube should be made to Alan Harris, Marketing Manager, IMI Yorkshire Imperial Ltd, Copper Tube Division, Kirkby Works, East Lancashire Road, Kirkby, Liverpool, L33 7TU.

"Whitewater" Range from R. S. White

R S White (Water Treatment) Ltd is a relatively new name in Water Treatment. The company is an associate of R S White Ltd who have been involved in the water treatment business for 50 years.

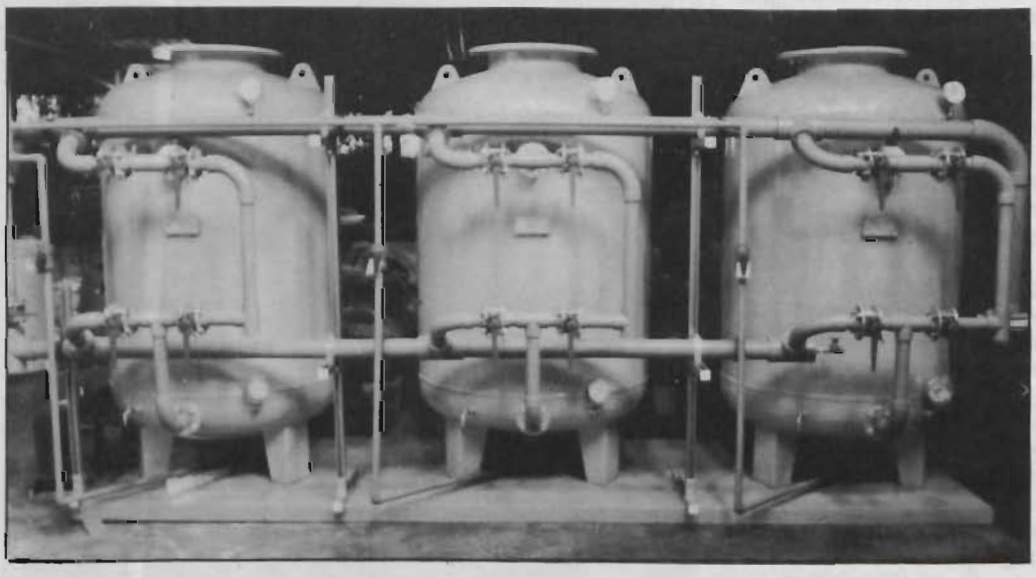
R S White (Water Treatment) Ltd now manufacture and market its "Whitewater" range of equipment in Ireland and have been very successful to date. The company is also looking to the export market as a potential growth area.

The new company is run by Mr Brian Keating and Mr Paddy Archer. Mr Keating has been involved in the water treatment business for many years as Managing Director of R S White Ltd and is well known in the industry with particular emphasis on industrial and process water treatment. Mr Archer has been involved in the project and design side of the water treatment business since 1972 for local authority and industrial work as well as having extensive experience in the middle east.

The emphasis with the "Whitewater" operation is on service for both sales of new plant and servicing existing plant. Mr Tim Quinn is responsible for sales and is particularly involved in filtration technique including membrane and ultra filtration.

The "Whitewater" Service Manager is Mr Pat Geraghty who has 20 years experience in servicing water treatment plant. Before joining R S White (Water Treatment) Ltd he was with 'Permutit' service. The company continues to service all water treatment plant supplied by R S White Ltd in the past including the provision of service contracts on all makes of water treatment plant.

The company is more than well equipped to service all types of water treatment plant and currently hold what is probably the biggest stock of resin filter media and spare parts in this country for servicing industrial water treatment plant.



● "Whitewater" triplex package pressure filter system at Dublin works.

Automatic Liquid Samplers from IIL

Industrial Instruments Ltd, for 25 years one of the leading instrument companies supplying water and waste treatment plant analysers, flowmeters and chemical dosing equipment, have now introduced a new range of automatic samplers.

Epic Products Ltd is an English company which specialises in the manufacture of samplers. The complete range was launched in Ireland at the October Water & Water Treatment Exhibition.

The latest in this product range is the effluent sampler EPS1020, which is designed to extract samples of liquid from an open channel or tank and deposit them in either a single composite container or sequentially into an array of 24 x ½ litre containers for subsequent retrieval and analysis.

According to Industrial Instruments the sampler has been carefully designed with the water particularly in mind and great attention has been given to its protection against the harsh environments often encountered at sampling sites.

The sampler uses the well known vacuum pressure principle to obtain the sample but is unusual in that it has an inlet and outlet valve in the sample chamber. This enables the blast purge technique to be used which is a very effective way of avoiding

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DOI: 10.21427/D7FD6N

blockages. The two valves are purged by high pressure air every sample cycle.

The effluent sampler can be used in conjunction with a separate flow integrator and it is simply wall-mounted at a point convenient to the source. Where no support is available, a sturdy mounting frame can be provided. Also available is a 24 x 500 ml automatic bottler with circular wide neck which is easy to clean.

The EPS 1020 can be used to sample most sewage works and industrial effluent including crude sewage. It has a high lift velocity which ensures that suspended solids are lifted in the correct proportion.

The EPS sludge sampler is designed to extract samples of sewage from a flowing pipeline or alternatively from a sludge holding tank via the tank wall.

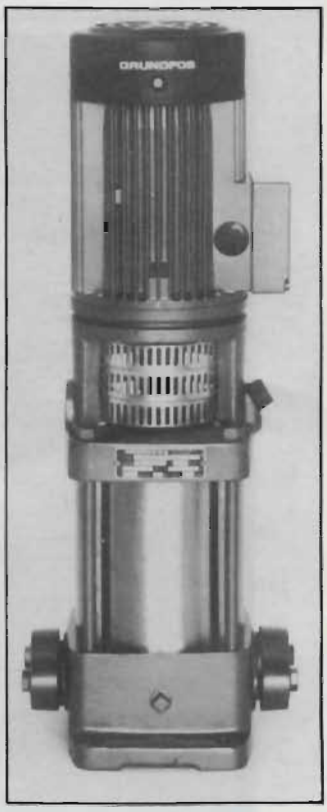
This device will sample any liquid sludge including raw primary sludge up to at least 12% total solids content. According to the manufacturers the sampler is constructed largely from heavy duty plastic materials and requires no routine maintenance apart from periodically cleaning the sample chamber. Its attachments are similar to that of the effluent sampler. It also has a portable conversion unit which converts the two piece format sampler into a portable kit. Fittings are installed at various sample tapping points and the sampler can then be easily removed from site to site.

The other interesting product in the EPIC range is the portable effluent sampler, the EPS 1010 which, according to the manufacturers, fits down the smallest manhole and makes regular automatic sampling easy and effective.

The EPS 1010 comprises three interlocking modules which together form a light portable self-contained unit. The carrying handle hinges down to form a rest for the control module which hinges open to give access to the control panel and the sampling panel. The sample chamber cover and all the pipework are made of clear materials so that the complete process can be observed.

The top section of the sampler houses the low power logic circuitry which incorporates a quartz crystal oscillator for precision timing. The centre section houses a high velocity peristaltic pump which draws the sample from the source and pumps it into the sample chamber. Excess liquid is discharged down the tube as waste until the pump stops. This gives a constant sample volume which is then released into a container at the base

Details from Industrial Instruments Ltd, 6 Herbert Place, Dublin 6, (Tel: 761953).



● Grundfos CR4 pump from H R Holfeld.

AWT OFFER TOTAL FACILITIES

Advanced Water Treatment Ltd, Northern Ireland's only manufacturers of water treatment chemicals, have moved to new premises at 14 Gregg Street, Lisburn, to meet with increasing demands for their product range.

The management of the company is under the direction of Dr R Houston who has many years experience as a consultant, particularly in the fields of ferrous and non-ferrous metal failures.

The company, which manufactures mainly chemical products for boiler water and cooling water systems, has greatly increased its clientele over the past few years. However, the chemical range is not restricted to boiler and cooling systems but extends to all areas of treatment, eg floculation of industrial waste waters or sewage, sterilisation and treatment of potable water systems.

Peabody Water Services Ltd, previously with Sermet (NI) Ltd, have transferred their agreement to AWT Ltd, thus giving them a comprehensive range of water treatment plant. Mr S Ramsey, CEng, FIMar, Engs of Sermet (NI) Ltd is still involved in the field on behalf of AWT Ltd, therefore assuring continuity of service to their many existing customers.

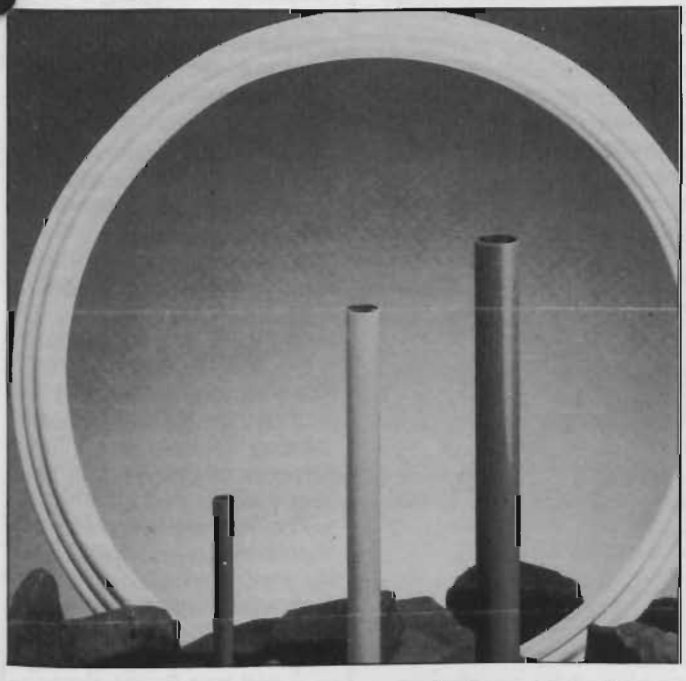
Consequently, this leaves AWT Ltd in the position to offer a total facility with both chemical and plant supplies. All types of water treatment plants are available and indeed have been extensively used in NI for some years now. These include filtration, clarification, reverse osmosis, dealkalisation, demineralisation and base exchange water softener systems. In addition, AWT Ltd supply all types of chemical dosing and blowdown/bleed systems, either with semi or fully proportional control.

At their Lisburn premises the finished products are formulated in large stainless steel vessels fitted with stirrers and transfer pumps. Strict quality control and laboratory testing assures product stability. A fully equipped laboratory is available for product development and routine analysis. Over the past three years the quality and analysis of most local waters have been carefully documented and the company has therefore a full appreciation of most of the local problems encountered.

AWT Ltd liaise with their clients, ensuring they are fully aware of their treated water conditions by submitting reports after regular site visits tailored to the specific requirements. In addition, boiler plant is periodically examined in conjunction with insurance surveys.

Peabody Water Services Ltd treatment plants are extensively used in Northern Ireland throughout the public and private sectors. Many of the small local boiler plants quite simply use a base-exchange softener to remove hardness from make-up waters and thus eliminate potential scaling. Others use more sophisticated plant for specific reasons.

Details from Advanced Water Treatment Ltd, 14 Gregg Street, Lisburn, Co Antrim BT27 5AN, (Tel: Lisburn 6555).



● Kuterlex plastic covered copper tube from the Copper Tube Division of IMI Yorkshire Imperial.

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DOI: 10.21427/D7FD6N

COMPANY PROFILE

LANDIS & GYR — CONTROLLING COMFORT ALL OVER THE WORLD

In 1896, when the use of electric power in industry was becoming increasingly more widespread, Richard Theiler founded the Electrotechnische Institut Theiler and Co. Seven years later he acquired a partner, Heinrich Landis, who was later to buy the business. He, in turn, was joined after one year by Dr Karl Heinrich Gyr who had had his formative training in England. The new partnership was registered under the name of Landis & Gyr.

At its inception, the company concentrated on the production of electricity meters, employing 35 people and manufacturing around 3,600 meters a year. The Landis & Gyr Group, with its headquarters at Zug in Switzerland, now employs in excess of 17,000 people throughout the globe and with an annual turnover of more than £420 million, it is not only Europe's largest manufacturer of electricity meters, but has also branched out into the fields of industrial components, telephone equipment and comfort control.

It was during the mid-fifties that Landis & Gyr UK first introduced burner controls into its range of products and subsequently became very active in the entire sphere of controls and control systems for heating, ventilating and air conditioning. Landis & Gyr further established itself in this field in 1972 when it merged with the Billman Regulator Company of Sweden to become Landis & Gyr Billman Ltd. A programme of product rationalisation incorporated this company still further into the Landis & Gyr framework until, in 1976, it began to trade as the Comfort Control Division of Landis & Gyr Ltd.

Consequently, the Comfort Control Division has harmonised itself to meet the increasing need for heating, ventilating and air conditioning systems that cope with escalating requirements in terms of comfort, safety and environmental conservation. So much so, in fact, that it is now the leading European manufacturer.

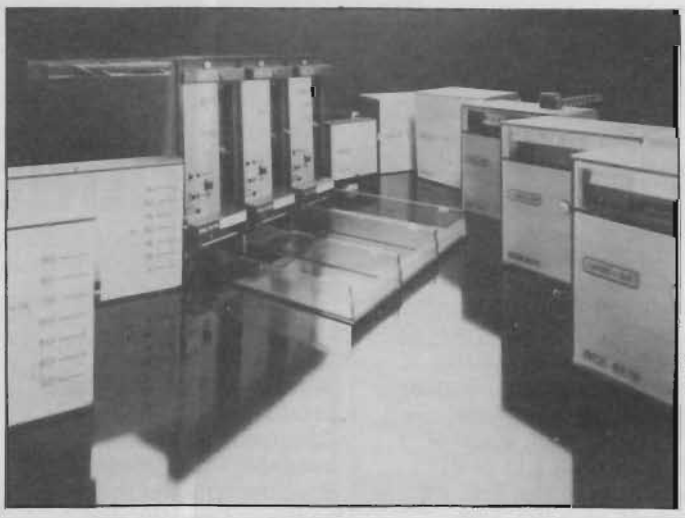
In the Republic of Ireland, Landis & Gyr is represented by Brown Boveri (Ireland) Ltd who act as the Group's sole agents in the country

Brown Boveri (Ireland) Ltd was incorporated in the Republic of Ireland in 1946 and over the last 37 years has been one of the major suppliers of power generation, transmission, distribution and industrial electrical equipment in the country.

The company is a member of the BBC Brown Boveri Konzern which employs over 100,000 people in 126 countries and has annual sales of IR£3 billions.

In the Republic of Ireland, the company employs a staff of 85 in its new offices and factory at the Whitestown Industrial Estate, Tallaght, Co Dublin.

Something which Brown Boveri (Ireland) Ltd and Landis and Gyr Ltd have in common is that they both have a Swiss parentage and the two companies agreed 17 years ago to cooperate in the sale of Landis & Gyr HVAC controls in Ireland. Over this period they have served the trade as one of the leading suppliers in the field.



● Polygyr from Landis & Gyr.

Extensive stocks of the complete Landis & Gyr range of controls are held in Tallaght and trained personnel are always available for sales, service and advice.

The Landis & Gyr range of HVAC products includes heating control systems for all types of buildings governed by ambient temperature and weather, universal controllers for ventilating and air conditioning, automatic units for the control and safety monitoring of oil and gas burners, and building automation systems.

At the top end of this market, Landis & Gyr's most advanced product is the Visonik 4000 — a building automation system in which a central computer can be linked with up to 170 sub-stations, each equipped with its own "mini-memory". The system has been developed for monitoring, supervising and controlling building services in developments such as universities, hospitals, government and military establishments, factories, oil and chemical installations and large office complexes.

Each of the substations is equipped with a microprocessor which monitors and controls individual functions. The Visonik can play an important role in building security by checking that security tours have been properly conducted. It will respond to burglar alarms and will activate fire-prevention equipment. All information on performance, security and breakdowns can be produced in print-out form by the central computer or direct on to a VDU.

Another Landis & Gyr range designed for "large-scale" applications is Polygyr, an electronic control system for ventilating, air conditioning and heating installations. It is available either as a compact or as a module range.

Intended for the environment in factories, supermarkets, offices, hospitals or schools, Polygyr controls room extract and discharge temperature, flow and return water temperature as well as mixed air and dew point temperature. It also controls the relative and absolute humidity in rooms, pressure and pressure difference of liquid and gaseous media in steam boilers, heat exchangers and air ducts. It provides supervision of filters as well as heat recovery systems such as rotating wheels, air dampers or closed circuit heat exchangers.

The Polygyr system operates by receiving signals from building automation systems and transmitter detectors. It is simple to understand, easy to install and very reliable.

Landis & Gyr has also produced several

generations of optimisers over the years and was, in fact, the world's first manufacturer to introduce a microprocessor-based optimum start control system. The current model, the Sigmagyr-OSC 21, incorporates two microcomputers which, along with other significant modifications, make it the most sophisticated piece of equipment of its kind as well as making it simpler than ever to operate.

Sigmagyr-OSC 21 is used for optimising the switching on and switching off functions of heating and air conditioning plants which operate to a certain time schedule at normal and reduced loads. It evaluates the measured and outside room temperatures as well as their progress during the optimum start and optimum off phases. Using these temperature characteristics, the unit's two microcomputers calculate the optimum start and optimum off curves of the building and operation is therefore self-setting, self-adjusting and self-learning with no need to enter the building parameters and plant data.

Suitable for use in such buildings as office blocks, schools, department stores and factories, Sigmagyr-OSC 21 calculates the plant starting time necessary for the required room temperature to be reached by the start of occupancy — thus facilitating energy saving without loss of comfort. As soon as the building is occupied the optimiser transfers command to the controller.

The unit is pre-programmed and occupancy time and real time are the only necessary settings. It is fully compatible with all heating controls from Landis or other manufacturers — both current and previous versions — and is thus eminently suitable for updating existing plant.

Landis & Gyr also produce a variety of burner controls for oil and gas installations. The LAL range of controls is for

● The Landis & Gyr range of domestic heating controls.

forced draught oil burners of medium or higher capacity, one stage, two stage or modulating type burners. An oversized sequence switch with a lockout indicator is used to control the programme and there are a number of options with all time variants.

As far as gas burners are concerned, the LFMI series of plug-in automatic controls is designed for the automatic start up and supervision of one or two stage forced or induced draught gas burners. Flame supervision is by means of a UV detector — type QRA also available from Landis & Gyr — or by an ionization current detector electrode. The impact proof and heat resistant plastic housing contains the flame signal amplifier with flame relay, the electro-thermal programmer with two (counter-active) heating coils, an electronic pull-in/drop-out delayed auxiliary relay, the main working relay, the lockout relay and the lockout reset button with a built-in fault indication lamp.

Another range of gas burner controls, the LFL1, is designed to provide control and supervision of forced draught gas burners of both expanded flame and interrupted pilot construction of medium to high capacity. LFLI units are universally applicable and can be used for multi-stage and modulating type burners, gas/oil burners and burners of stationary direct fired air heaters.

Landis & Gyr also supplies a complete range of controls for the domestic central heating market. The RWB2 is a programmer designed to provide individual time control of central heating systems and/or hot water supply. It is able to operate either 10 or 16 different programmes and selection of this programme range is made by means of a two position adjuster located in the rear of the unit.

● LAL oil burner control from Landis & Gyr.

Another programmer is also available from Landis & Gyr, the RWB3, which operates a single circuit once or twice a day but also with a full 24-hour 'on' period or it may be switched off leaving clock operating.

There is also a range of simple on/off or change over room thermostats — the RAD range — with thermal acceleration and bi-metallic sensing element. Clamp-on or cylinder thermostats form another part of the Landis & Gyr Domestic Controls 'package'. Called the RAM21, the cylinder thermostat regulates the temperature of domestic hot water by the on/off control of motorised valves, circulating pumps and so forth. Indeed, two new motorised valve products represent the latest additions to this range. The SK2, a two-port motorised valve for zone control, provides individual control for both domestic hot water and central heating circuits whereas sister product, SK3, is a three-port motorised mid-position valve for fully pumped systems which may require partial heat supply to both hot water and central heating circuits at the same time.

The Landis & Gyr domestic range is completed by the series of RLK thermostatic radiator valves, designed to provide independent and automatic temperature control in individual rooms where a hot water central heating system is in use. Various models are available including two-port and three-port versions, angle and inverse angle valves and options on built-in or remote temperature sensors.

Landis & Gyr are, in fact, one of the very few companies in the heating controls industry who are able to supply a complete range such as that outlined above for the domestic market. The company sees domestic controls as being one of the most significant areas of business in 1984.

DOI: 10.21427/D7FD6N

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I look forward to hearing from you.

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Fortinbrass

The Shielings,
Ballychilly,
January 17th, 1984.

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Innis Flannel.

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https://arrow.tudublin.ie/bsn/vol23/iss1/1
DOI: 10.21427/D7FD6N

The McWHINGE FILE

32 High Street,
Ballychilly,
January 14th, 1984.

Mrs Fanny McWhinge,
The Sheilings,
Ballychilly.

Dear Mrs McWhinge,
I feel a terrible fool but I am having to write to all my husband's customers that are expecting to hear from him and I know that he is due to give you an estimate for some heating work. The fact is, poor Jerry will not be pricing any jobs, or driving the van or doing anything much for the next few days until the hospital sorts him out. Not that he is ill you understand, in fact the rest would be doing him good if he wasn't so frustrated.

I don't think I am making myself clear. Jerry met with an accident but it didn't hurt him although he can't work. I suppose that it's my fault really, I had been hounding the poor man for a long time to do a little job in the kitchen. He is very good with his hands but the problem is to get him to put the time to a job. Anyway, we had repainted the kitchen and I wanted a new piece of Formica to be glued over the old working top. Not that there was anything wrong with the old stuff but the colour didn't match.

It was Sunday and I was off to my sisters and her and Jerry have not got on together since her budgie picked up a word that Jerry only uses in times of great stress. Its amazing how budgies do that, let them hear the wrong word just once and they have it for ever but you can never teach them the right ones. So of course Jerry didn't want to come. So, like a fool, I had to go and remind him of the Formica. Then Jerry said that he didn't have the proper glue and couldn't get it on a Sunday. So then I had to remind him of the sample dozen of superglue that a rep left with us. That's why I say its all my fault — I should have left him peacefully in front of the television like any other husband.

Now Mrs. McWhinge, I don't know whether you have ever had anything to do with superglue. Its great stuff but it has to be treated with respect because it sticks to your skin as if it grew there and it sets very quickly.

Anyway, poor Jerry gets the top all sanded off ready for the new piece. Then he puts the new piece standing on its edge on the top, and he puts superglue all over the underside. Then it started to overbalance and fall forward and Jerry, not thinking, puts out both hands to stop it. He stopped it all right: No sooner did it touch his hands than he realised what he had done but by then it was too late. He was firmly attached by all eight fingers, both thumbs and the palms of his hands to a six foot long Formica panel. He panicked for a bit he told me, and then he had a bright idea. He curled up into a ball (not the easiest thing with his figure), put both feet on the panel and pushed with his feet to get it off his hands. But he seemd to have timed it badly. The glue was wet enough to stick to but too dry to let go. The poor man spent the entire day curled up into a ball, just like a fly on a flypaper, until I came home that evening.

When I came in the Formica was face down on the kitchen floor with Jerry making feeble little hops to try to get to the telephone; he said he thought that he might be able to dial with his nose. I had to get the fire brigade, its a volunteer force here and they dont like turning out on a Sunday, but they came eventually and then the Captain said he wouldn't have missed it for the world — I can't think what he meant. Not that they did much. They untied his shoelaces which I could have done if I had thought of it and they cut up my good Formica leaving two bits on his hands like little paddles. You can imagine how poor Jerry took all this, all I can say is that it was a good thing that my sister's budgie was nowhere near. Now he is in hospital and they are taking off the Formica in strips with a special solvent. They can only get off about half an inch a day and he has quite big hands so they think that it will be another week at least.

So I thought I had better write and explain he will not be back at work for a while.

Yours sincerly,
Elizabeth Bibcock.

Tir na nOg,
Innis Flannel,
January 15th, 1984.

Mrs Fanny McWhinge,
The Shielings,
Ballychilly.

Dear Aunt Fanny,
Uncle Sean has just told me that you are considering changing or re-arranging your heating system at the Shielings. Well, all I can say is you have a rather short memory. I flatter myself that I was able to be a real help to you when the work was first installed nearly twelve years ago and it would be in your own interest to consult me again. It isn't every old lady that has the benefit of a nephew in the Civil Service, let alone one that is a Senior Beaurocratic Officer. You have ready access to a trained administrator, one of the countries leaders, though I do say it myself, and you didn't ask for my advice! I find that most surprising.

Perhaps you have forgotten that I have subscribed for upwards of twenty years to the "Handymans Guide to Doing it Yourself" and I flatter myself that I know a great deal more about domestic heating than the Bibcocks of this world. In fact at the present time I am advising a colleague on an installation for his own home. Well, not actually a colleague, he is a fellow civil servant but he is in the Department of Prevarication just up the road from our own office. It

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DOI: 10.21427/D7FD6N

A Fresh Look at Design Requirements

No one needs to be reminded of the seriousness of the present recession in the building industry but, while business is very slow, developments have continued in both the design and the materials used in pipework and drainage. Flexible joints have, in a few short years, become the norm for rigid pipes and are now recommended in preference to the traditional cement mortar joint. Proprietary access systems in uPVC and GRP are becoming available in increasing numbers, with life expectancy in the order of 30 to 50 years.

With these changes in mind, a fresh look at the design requirements for underground drainage is called for. Starting with the basics, unless a drain is pumped, it must be of such size and gradient that it is self-cleansing and efficiently carries away as much matter as can be discharged into it. A drainage system should be simple, direct and make use of natural slopes avoiding bends except at the foot of a stack.

The flow from branches should never be run into the main at right angles or against the flow and runs under buildings should be avoided wherever possible. One of the main problems with new buildings is settlement and the effects of differential settlement between the building and the drain must be considered and precaution taken. Accessibility must be maintained and provision for future connections may also need to be considered.

Gradients and Pipe Sizes
The gradient should be sufficient to ensure self-cleansing and to prevent accumulation in the pipe which is a greater risk in housing where the use is intermittent. Gradients and pipe sizes may be assessed for domestic schemes from Table 1.

The minimum permissible pipe sizes are:

Fould drainage 100 mm;

Ground water drainage 75 mm;

To prevent trap siphonage, the depth of flow in a pipe should not exceed three quarters of the pipe diameter.

A 100 mm pipe should not serve more than 20 houses and a 150 mm pipe should serve a maximum of 150. Junctions to the drain should be made obliquely and in the direction of flow and should remain watertight under all working conditions.

Access to Drains
Access should be provided for inspection, clearing blockages, testing and inside a building where there is an inlet to the drain. Areas in particular that require access include at each change of direction or size; at junctions where contained angle a° is more than 45°; at a point of connection to another drain, or within 12.5 m of a connection or junction; at the head of each length of drain; at changes of gradient and within 45 m of any part of a drain.

A rodding eye may be used at the highest point of a shallow branch drain and inspection chambers are used where surface inspection is possible.

Access should be of size and form to permit access for cleaning and inspection. For an inspection chamber with up to two connections on either side the minimum internal dimensions should be 700 mm wide and 750 mm length. Smaller chambers may be used where depths are less than 750 mm and where there is no more than one junction at either side. It should have a removable and non-ventilating durable cover of adequate strength; this is especially important with uPVC and GRP materials.

A manhole is used where the invert level of the drain is more than 90 mm and where it is necessary for a man or woman, (does this mean a name change to personhole in future) to climb into the chamber for access. The minimum internal diameter for round chambers is 1.1 mm and, like an inspection chamber, should be fitted with a cover.

Internal inspection chambers within a building must be fitted with a non-ventilating cover in a frame having an air-tight seal and secured to the frame by corrosion resistant removable bolts.

An essential of good drainage is the maintenance of a free passage of air throughout the drainage system. Correct positioning of ventilating pipes at the head of the drain is normally sufficient to achieve good ventilation.

Peak Flow (L)	Pipe Diameter	Minimum Gradient	Minimum No. of W.C.'s	Maximum Load
1 100 mm	1:40	None		
1L	100 mm	1:80	1	up to 20 houses
	150 mm	1:50	5	Up to 100 houses

Table 1.

Unidare Terrain — Catering for Every Need

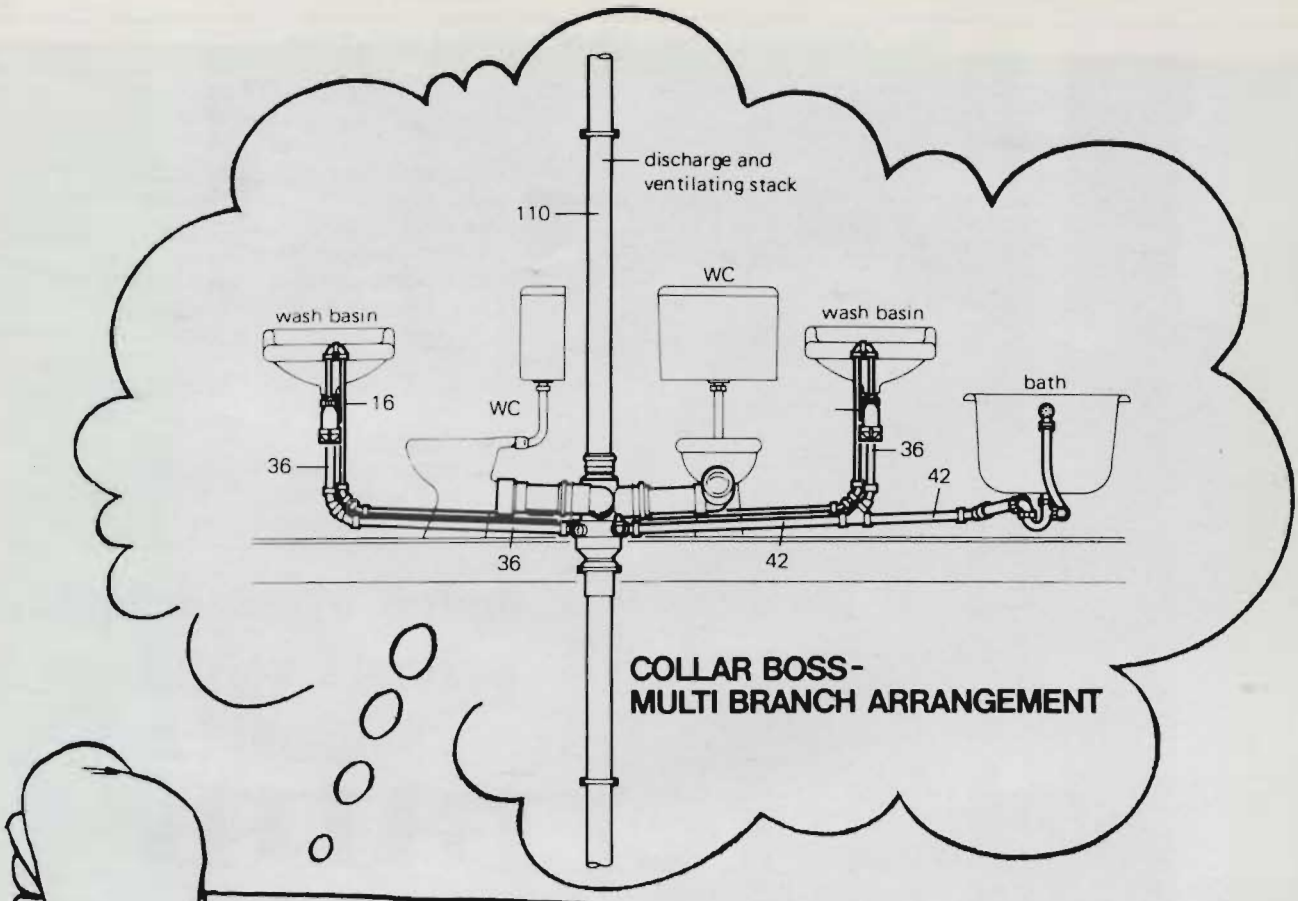
Unidare, one of Ireland's largest manufacturing companies, markets Terrain plastics systems for both soil and waste and rainwater applications.

The Terrain soil, waste, traps, waste outlets and overflow systems are all designed to meet the requirements of British Standards specifications. Each system comprises a wide range of socketed fittings for use with plain ended pipe and solvent welded or seal ring joints.

A range of fittings is provided for expansion joints to accommodate thermal movements, and there are accessories for connection to other materials, such as CI, GVC and plastics below ground drainage.

The Unidare Terrain four boss branch is a neat solution for soil and waste problems that meets the toughest demands and complies with Code of Practice (BS 5572) requirements for multiple connections, it saves costs as there is no need for parallel branch connections, and ductwork is kept to a minimum for 110mm pipework.

Terrain straight and angled connectors allow connections of waste pipes to BS 5254, BS 5255, Imperial and metric copper



Marley makes your pipe dreams come true!

COLLAR BOSS-
MULTI BRANCH ARRANGEMENT
part of today's most successful soil and waste system. Saves time, cost and space. Make your pipe dreams come true–write or phone for full details and literature, to:

Marley Plumbing

guaranteed irish

Manufactured in Ireland and marketed by
MARLEY Flooring and Plumbing Ltd.,
Lucan, Co. Dublin. Telephone: 01-280691.

Terrain. Less waste, more speed.

Faster assembly with fewer fittings and less wastage. That's what Terrain plastics soil, waste and trap systems offer.

With Terrain, you can build a complete soil stack with as few as six fittings. Saving you time and effort. While our prefabricated stacks go up even faster.

Thanks to Terrain solvent weld, joints are clean and strong. They stay that way, too.

Terrain also saves on breakages with easy-stacking plain ended pipes. And you can use the off cuts.

So if you're looking for soil and waste systems that give you all the advantages, choose ours. They're every bit as good as Terrain rainwater and underground systems.

Unidare Limited,
Finglas,
Dublin 11.
Telephone 771801 for technical advice

UNIDARE TERRAIN
SOIL WASTE RAINWATER UNDERGROUND
Systems for Professionals.

sizes up to 2" (50.8mm). The branch is available in all-socketed or spigot/socket configurations and the sockets give a choice of solvent weld or seal ring jointing.

The Terrain half-round or square uPVC rainwater systems are designed for efficient disposal of surface water from all low and high rise domestic buildings. The system comprises a wide range of spigot/socket fittings for use with plain ended pipe, and socketed gutter fittings for use with plain gutters.

In addition, there is a range of fittings for connection to other materials. Both square and half-round rainwater systems are designed for on-site use.

Terrain also manufacture a variety of roof and balcony outlets in uPVC.

For further information contact Unidare Ltd, Jamestown Road, Finglas, Dublin 13. (Tel: 771801).

● The Unidare Terrain Four Boss Branch.

Comprehensive Range from Marley Flooring and Plumbing

A comprehensive range of PVC pipes and fittings suitable for soil, waste and underground drainage are made by Marley Extrusions (Ireland) Ltd and marketed by Marley Flooring & Plumbing of Lucan, Co Dublin.

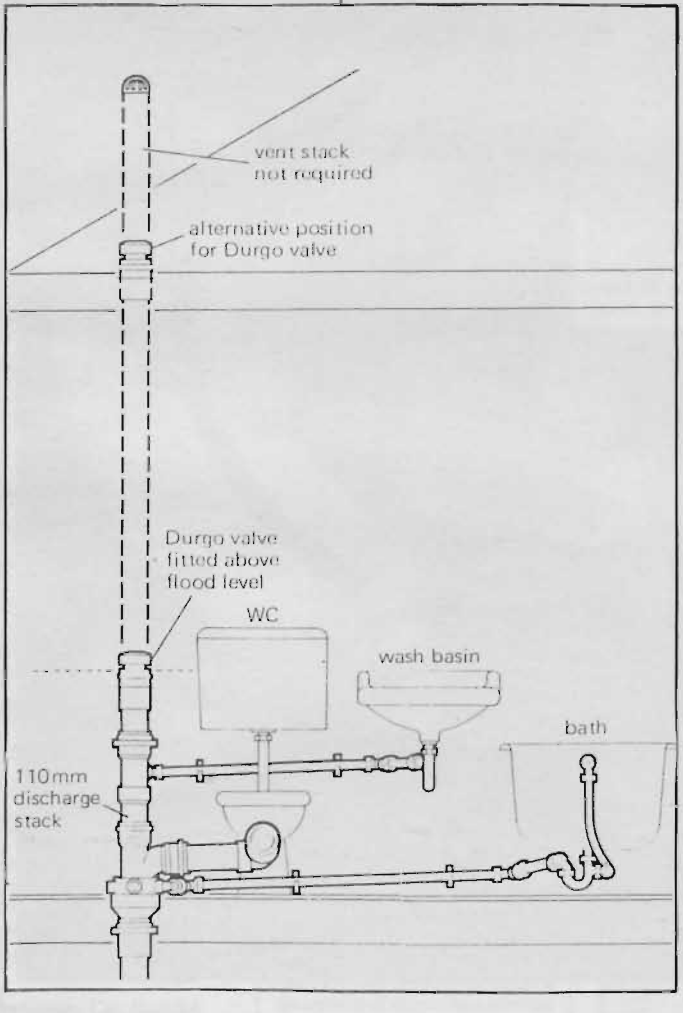
Soil pipes and fittings — 110 mm diameter soil pipes with integral "O" ring sockets — formed in the extrusions factory by an advanced technique — have been in ever increasing demand since their introduction some time ago.

The well-known and extensive range of Marley soil fittings includes some unique patented fittings as follows: Marley adjustable bend; Marley collar boss and Marley multi-branch.

More recently automatic air admittance valves called "Durgo" valves have been added to this range. The simple but ingenious mechanism of the Durgo valve causes it to respond in a sensitive manner to fluctuating air pressures in a sanitary pipework system.

The units are designed to reduce the number of ventilating pipes and hence roof penetrations in domestic, hospital and commercial sanitary plumbing systems without affecting drainage performance and with the additional benefit of cost savings.

Waste pipes and waste traps — Marley PVC waste pipes and fittings are available in three sizes — 36 mm (1¼"); 42 mm (1½") and 55 mm (2"). The excellent range of fittings includes swept tees, large radius bends and access caps. High temperature CPVC pipes are available for situations where temperatures above 70°C are likely to be encountered.



● Typical domestic sanitary pipework arrangement incorporating a 110 mm Durgo valve from Marley.

The Marley PVC overflow pipe system, which consists of 22 mm diameter pipes and fittings is another very popular system.

An excellent range of small diameter waste traps are offered. Most of these traps incorporate a 76 mm water seal, an essential requirement for single stack installations. Anti-siphon deepseal traps are also important items in this range, as are running traps and special washing machine traps.

Marley underground drainage systems — Marley offer a comprehensive range of fittings in 110 mm (4") 160 mm (6") and 250 mm (9") sizes for use in underground drainage. Pipes and fittings are made both to Local Government specifications and to British Standards.

For situations where

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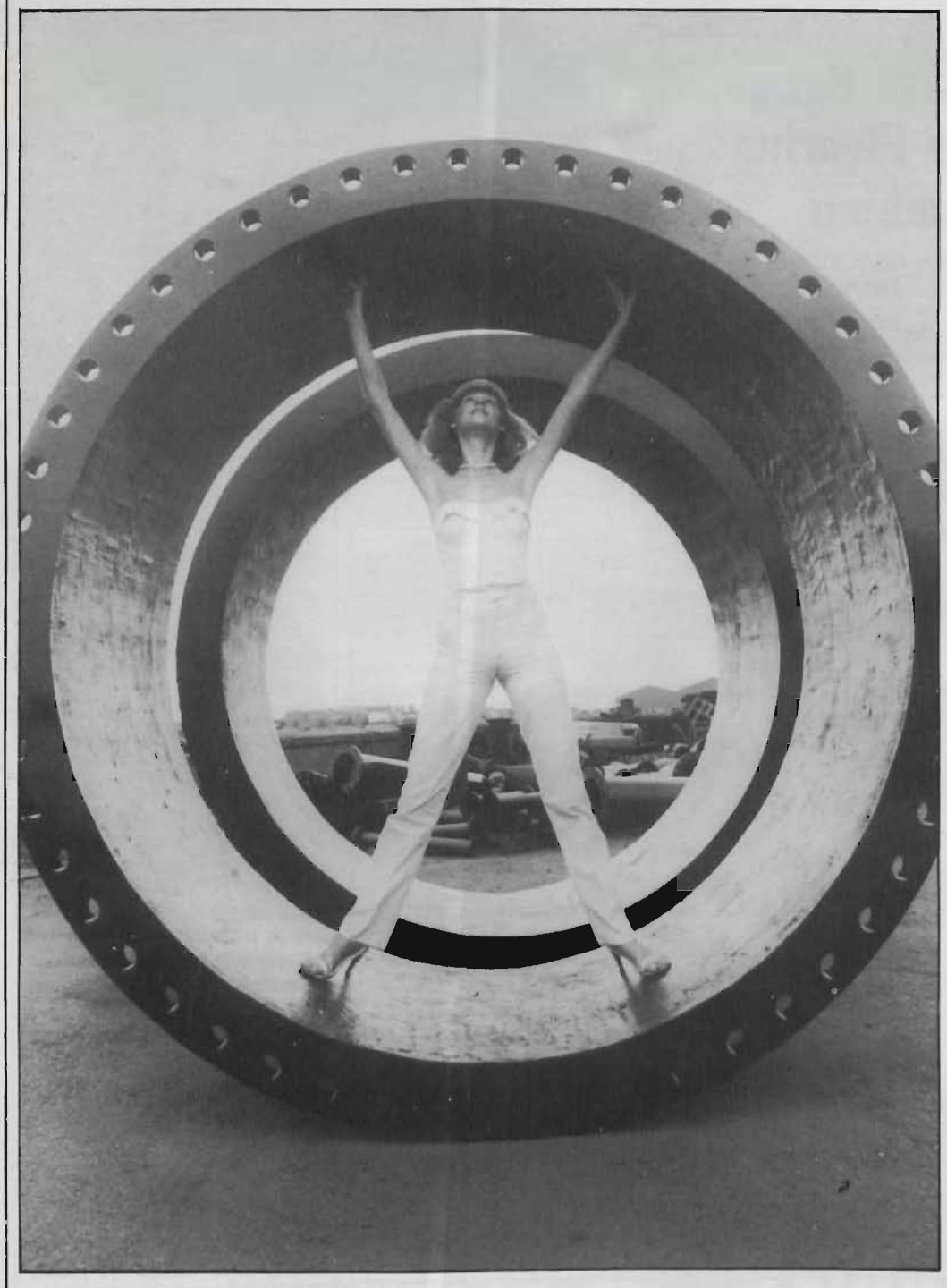
traditional drainage manholes would not be desirable or acceptable, a "Sealed Access" drainage system is offered.

The Marley Inspection Chamber system has been developed to provide an alternative choice to sealed access manholes in shallow drainage runs.

Following the success of their Irish-designed and manufactured Universal gully trap, Marley Plumbing introduced sewer pipes with integral 'O' ring sockets at one end. By eliminating the need for a separate coupler, the Marley pipe is quicker and easier to install and therefore more economical in use.

Marley offer a comprehensive range of injection moulded fittings in their (9") 250 mm diameter drainage system; 250 mm diameter is the preferred size in Local Government Specification LG 77 for 9" nominal diameter pipes.

Literature on all of the above systems is available from Marley Flooring & Plumbing Ltd, Lucan, Co Dublin, (Tel: 280691).



● The 6 ft diameter pipe specially cast by Tonge & Taggart for the ESB.

Marriage of Traditional Craft and New Technology

To get the best measure of the strength of Tonge & Taggert, one only has to look at the decimation of the entire foundry industry, both here and overseas, over the last ten years. At one time there were over 100 concerns in the UK but this has now been whittled down to 10 with worse still to come. Here in Ireland the situation has been similar (though naturally on a smaller scale).

Throughout, Tonge & Taggart has survived, primarily because of the vision and foresight of an enlightened management who realised that the key to survival lay in a marriage of the traditional craftsmanship and new technology. The company hasn't been slow to adopt new techniques and methods of production but at the same time has insisted on retaining the skill element involved from the craft point of view.

Herein lies the key to Tonge & Taggart's success — the ability to offer a total package in relation to water, sewage and gas distribution systems. There are four key elements in any job — the spec, the pattern, the moulding and casting, and the finishing. Each of these areas is under the total control of the company. . . modern practice is to import patterns but Tonge & Taggart are now unusual in that they have their own pattern makers and machine shop, in addition to a jobbing foundry.

The combined advantage of these factors is a flexibility which cannot be

New 5" Rainwater from

wavin

Introducing Superline, the faster clipping, better looking, rainwater system

NEW APERTURE DOWNPIPE FITTINGS

These fittings are so designed that they conceal rough uneven joints, eliminate the necessity for glue and allow for expansion–so you get neater, faster, more efficient fixing.

NEW DESIGN

This is the big one–5," a more efficient better looking system. Kitemarked to BS 4576 Part 1 and manufactured to the highest standards of precision.

Whatever you think about present rainwater systems–forget it. Because, suddenly, this new 5" (125mm) Superline system from Wavin outdates them all. The product of research and development, it's designed for the homes of today–and tomorrow. In black or, even, brown and with the Kitemark assurance, of course.

wavin

For further information write, phone or call to:

Wavin Pipes Ltd., Balbriggan, Co. Dublin. Tel. (01) 412260

NEW FLOW CAPACITY

Independent tests have shown that Superline drains rainwater more quickly because the outlet is designed and shaped to accelerate the flow of water.

NEW FLEXICLIP

Wavin's unique new Flexiclip system joints and seals gutter to fittings–in just one quick clip. All gutter offcuts can be easily used–no waste.

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matched by the importation of standard pipework and fittings. No job is so straightforward as not to require unusual non-standard additions and it is here that Tonge & Taggart come into their own. They get involved in a contract as early as the design stage and very often consult with the designer in charge to surmount major problems and thereby make the scheme more cost-effective.

In addition to pipes and fittings, Tonge & Taggart can produce virtually any type of casting, examples being the 6ft diameter pipe for the ESB; architectural bollards; lamp standards; railings; post boxes; even horse troughs (current most unusual "special").

The company has over 100 years experience in the industry and the 167 strong workforce includes a great number of who have 30 years plus service. Even Managing Director Nick Hodges has nearly 40 years in Tonge & Taggart, having worked his way up through the ranks to his current position.

In conjunction with this degree of experience and know-how, Tonge & Taggart are all the time striving to incorporate new methods of production into the process. Plans are currently well advanced for the total replacement of existing plant though it is emphasised that the new innovative practices will not render the craft itself obsolete.

This expansion is in anticipation of an expanding home market and also increased sales on the export side. Tonge & Taggart are making great strides in the Middle East at present with a high degree of success being achieved in Bahrain through their locally-appointed agent.

For details of these and any other developments on either marketing strategy or product capability contact Tonge & Taggart Ltd, East Wall Road, Dublin 3, (Tel: 786088); Telex: 30993.

Wavinmain and Superline Added by Wavin

The major new product introduced by Wavin during the past year was the 5" uPVC Superline rainwater system.

This superb looking system has a specially designed outlet to drain water more quickly than conventional systems. At least 40 litres per minute faster according to independent testing.

A Kitemarked system, Superline has a number of significant improvements on traditional systems. These include new flexiclip joints which incorporate retained fixed rubber seals for secure and easy jointing, and newly-designed aperture sockets to eliminate unsightly cuts.

It can also be fitted directly to the fascia, so there is no need for additional fixings and fittings. Superline is manufactured to Wavin's highest standard of precision.

During the past year Wavin have added Wafix, a captive fixed ring system to its range of sewer fittings.

The latest Wavin fittings to have Wafix added are the 110mm Wavin Access Junction; 110mm 87½° Swept Branch; 110m 15° single socket bend; 110mm 45° double socket bend and 110mm 92½° Swept single socket bend.

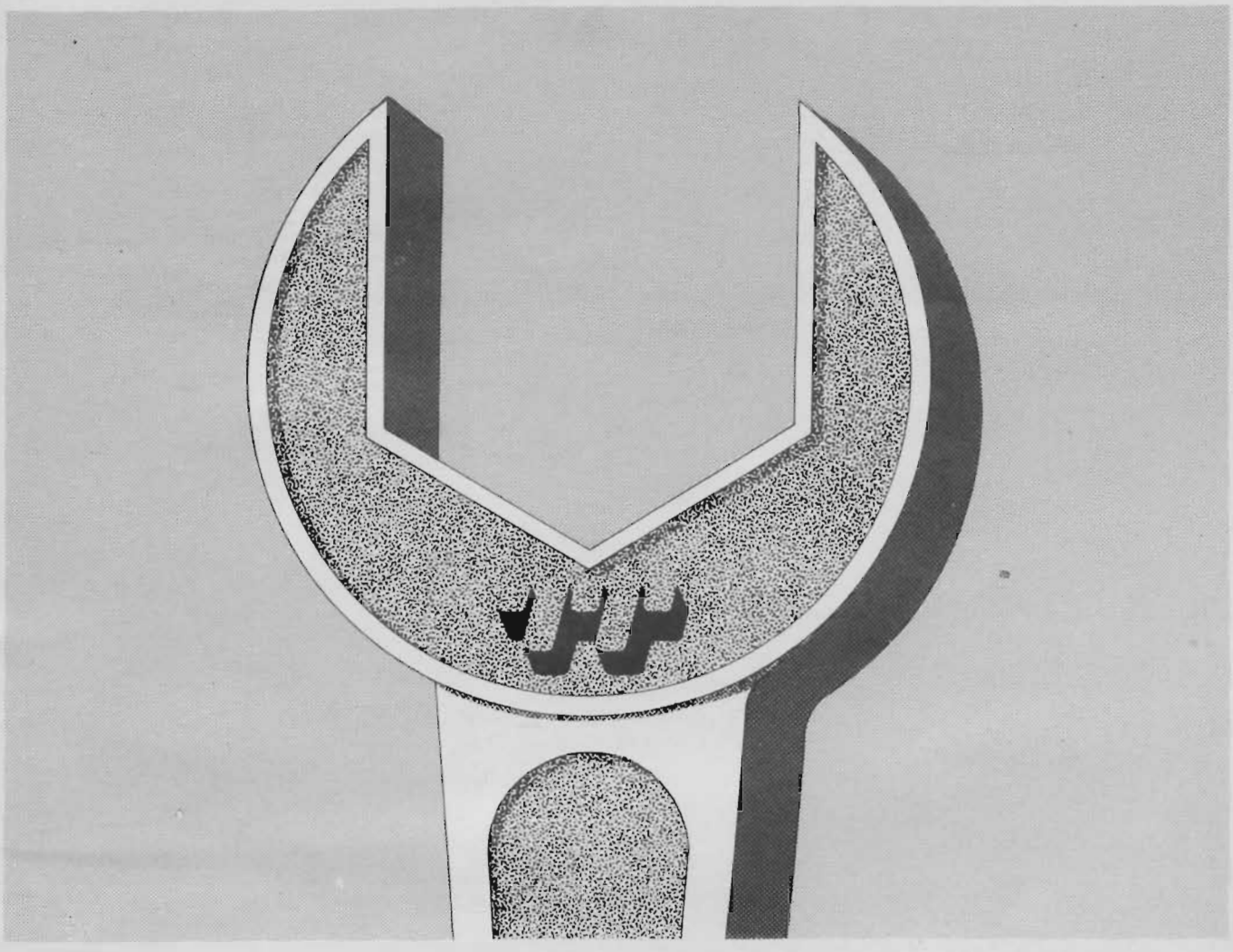
Added to the Wavinmain pressure pipe fittings during 1983 were the 4" and 6" fixed ring couplers.

Details from Wavin Pipes Ltd, Balbriggan, Co Dublin, (Tel: 412260).

● As part of its marketing drive for Superline Wavin have produced large laminated posters for use by builders providers and merchants. These posters can be displayed pinned to a backwall or hanging.

FORTHCOMING ISSUES

Next month's product review will deal with air conditioning and ventilation equipment while the Beaumont Hospital feature, also scheduled for February, has now been put back to the March issue.



Get it together, Easier than ever.

The Glynwed Timesaver system from Tonge and Taggart is aptly named. It's a range of cast iron pipes and connections with no sockets which has revolutionised drainage both above and below ground! The pipes are joined by a patent coupling that gives a water and air-tight joint at the twist of a spanner. And the system is ideal too for 'marriage' to existing cast iron installations. So get it together easily, quickly and safely with the Timesaver system from Tonge and Taggart . . . *They're men of iron.*

Tonge & Taggart Ltd

Ironfounders & Engineers
East Wall Road, Dublin 3, Ireland
Tel. (01) 786088. Telex 30993.

A member of the TMG Group

Gaffney McHugh

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DOI: 10.21427/D7FD6N

GATINE

INTRODUCING TO THE IRISH MARKET SOLID FUEL COOKER AND CENTRAL HEATING KITCHEN STOVE.

WOOD • COAL • TURF

HEATING — COOKING

DOMESTIC HOT WATER

The 'Gatine' multiple assets. . .

The Gatine: Cast Iron and Enamelled Steel Shield

Large cooking plate in polished cast-iron. All parts in contact with combustion gases (apart from boiler), in cast-iron or enamel steel plating.

Front plate, firebox door and ash pan in enamelled cast-iron. Cladding and cooking oven in enamelled steel plating; Gatine 15 - Gatine 19.

The Gatine: A Heart of Steel Boiler in special 6mm thick plating.

The Gatine: The Queen of Esthetic Appearance

Harmony of lines and colours, guaranteed elegant integration into all kitchens. Choice of colours: white or shaded sandstone.

The Gatine: Functional and Well-equipped

Voluminous 50 cm log firebox. Front loading at maximum height, so that the total volume of the firebox can be filled. Globe front oven with glass-back door providing for perfect cooking whilst not dirtying the globe. Bar protecting the cooking plate: Gatine 15 - Gatine 19. Insulating covers, reducing as required the radiation of the aparatus in favour of the radiators: Gatine 15 - 19. Between-season iron grille: every type.

Fuels:

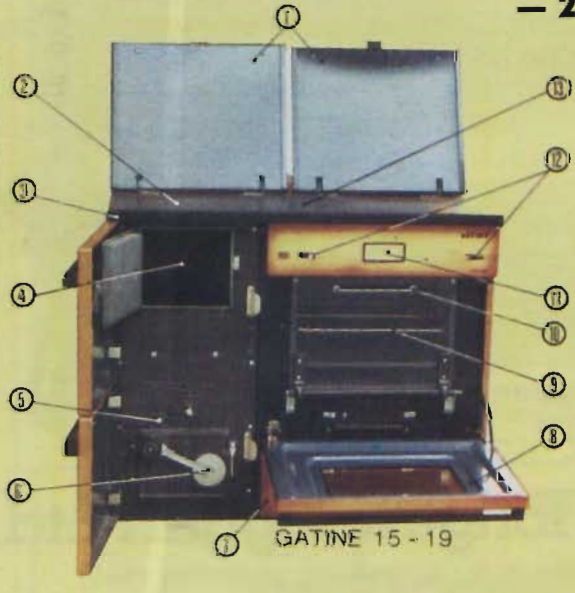
Dry wood, and any coal. Guarantee: Boiler: 3 years; all other accessories 1 year.

Gatine 15 - 19 SF = Gatine 15 without oven; Gatine 19 without oven.

Gatine 15, 72,000 B.T.U.'s; Gatine 19, 84,000 B.T.U.'s

— 2 colours available:
White or Sandstone

GATINE 15 - 19
without oven



GATINE 15 - 19

	DESCRIPTION
1	Insulating covers
2	Loading port. Firebox
3	Protective bar
4	Loading port. Firebox
5	Ash removal lever
6	Draught regulator. Ash can
7	Storage drawer
8	Oven door with glass globe
9	Oven with accessories
10	Glass counter door
11	Oven Thermometer
12	Selection levers: heating - cooking
13	Cooking plate

Gatine Ireland Limited

MAYNOOTH, Co. KILDARE, IRELAND. TEL: (01) 286371 OR 285391 (053) 31764

MULTIBETON® Underfl

Multibeton Underfloor Heating Systen

The MULTIBETON underfloor heating system, which carries an Agrément Board Certificate, comprises three main parts:

1) A boiler or calorifier capable of supplying hot water at temperatures up to 65°C, at rates up to the required peak load, and an associated system pump able to generate sufficient pressure to provide this required flow against the system's hydraulic resistance.
2) A distribution manifold and control system generally employing either a three-way mixing valve and proportional controller or a simple pump controller operated by an electrical thermostat.
3) Polypropylene pipe, retaining clips, damp-proof membrane, underfloor insulation and floor screeds, all installed in the building's fabric.

The distribution manifold provides separate control of individual circuits, all circuits operating in parallel and each controlled by simple two-port brass valves. The return valve is used to balance the system and the flow valve is used to adjust the heat output in a particular circuit.

The pipe itself is extruded rigid plastic of polypropylene type with a Vicat (ION force) temperature determined as 140°C and is worked in its preheated form. Pipe connections to valves and couplings are made with specially designed fittings which incorporate olives and internal sleeves and, for valves, 'O' ring seals.

The pipe is designed to withstand pressures of 3.5 N/mm² for more than 1000 hours at 95°C and 21 N/mm² for more than one hour at 21°C. This means that it cannot fail under pressure in service, including accidental over-pressurisation, in a heating system that has been designed in accordance
not suffer c
80°C maxim

Incorporation of MULTIBETON into a floor structure will not significantly affect the floor's performance in the event of fire.

Clips which secure the pipe in position during screeding are manufactured from coated mild steel strip corrugated at 50mm centres.

WHERE TO USE MULTIBETON

As MULTIBETON is integral with the floor screed it will generally be installed in new buildings designed for domestic or commercial use. However, the system can also be installed in existing buildings, even those with timber floor construction.

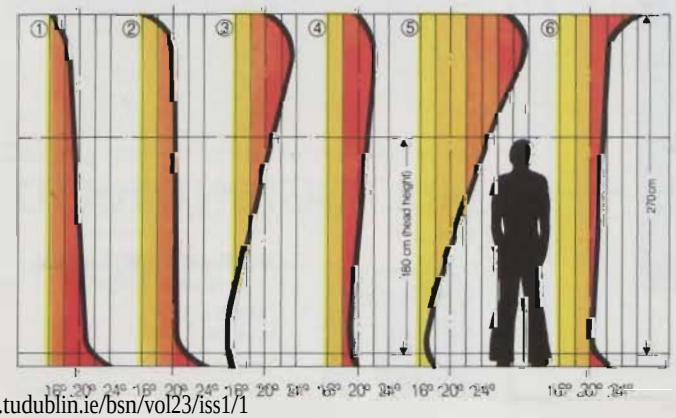
In special applications, MULTIBETON can be installed as a dry floor system and can also be incorporated within the wall finish, using standard building techniques.

Due to its integration within the building structure, the MULTIBETON underfloor heating system may be taken to have a life at least equal to that of a new building – approximately 60 years. The ancillary components such as manifold, valves and fittings will have lives dependent upon their conditions of use which, apart from renewable seals and maintenance, may be taken to be not less than 10 years. The MULTIBETON system is suitable for use in public buildings, swimming pools and gymnasia and is particularly efficient in premises with high ceilings or roofs when compared with other forms of heating. Additionally, MULTIBETON can be used in special situations such as external paths and approach ramps where it will prevent icing. In these situations, consideration must however be given to the loads likely to be imposed on the polystyrene insulation.

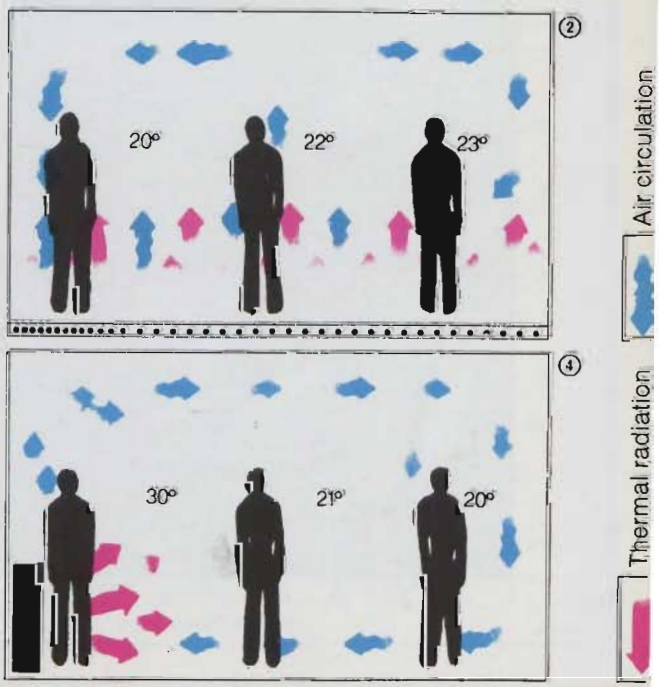
Effective Heating

From the temperature chart it can be seen that the distribution curve for a modulated underfloor heating system is the nearest to that of the theoretical ideal. Apart from a few centimetres above the floor and below the ceiling, the temperature remains constant over the whole height of the room. This guarantees a consistently low energy consumption. By comparison, radiator heating forms an uneconomical cushion underneath the ceiling which diminishes towards the floor to create a cool layer just above floor level.

① Best possible heating theoretically
② Underfloor Heating (modulation process)
③ Radiator heating (inside wall)
④ Radiator heating (outer wall)
⑤ Warm air heating
⑥ Ceiling heating



With warm-water underfloor heating, the temperature difference at head level – 1.8 metres – is lower from the outer wall to the inside wall than it is with radiator heating. Moreover, the proportion of convected heat is higher with radiator heating than with a modulated warm-water underfloor system.



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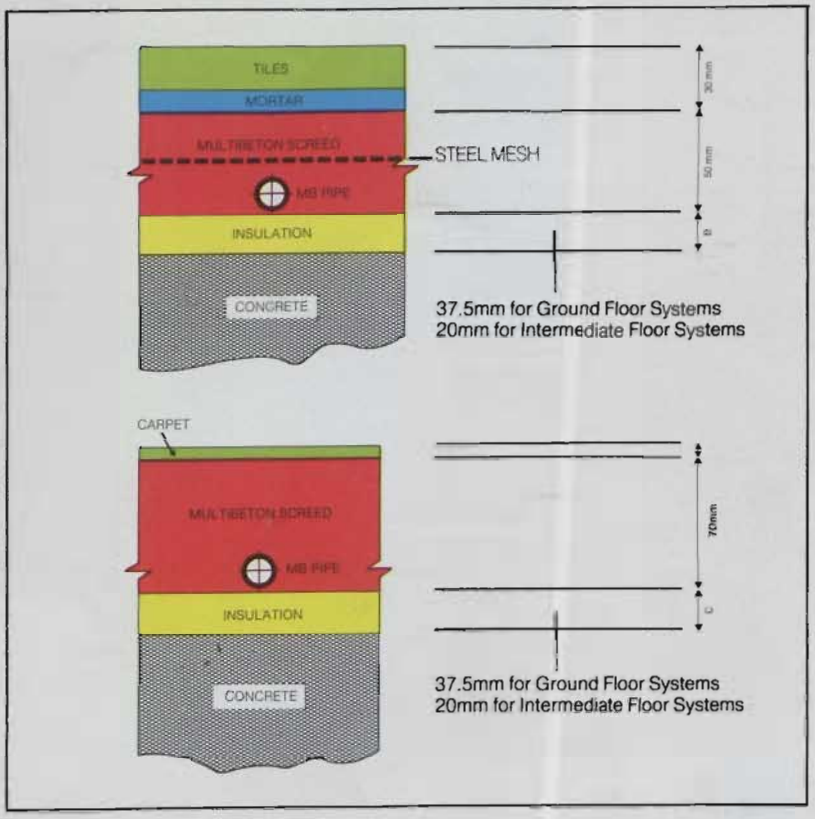
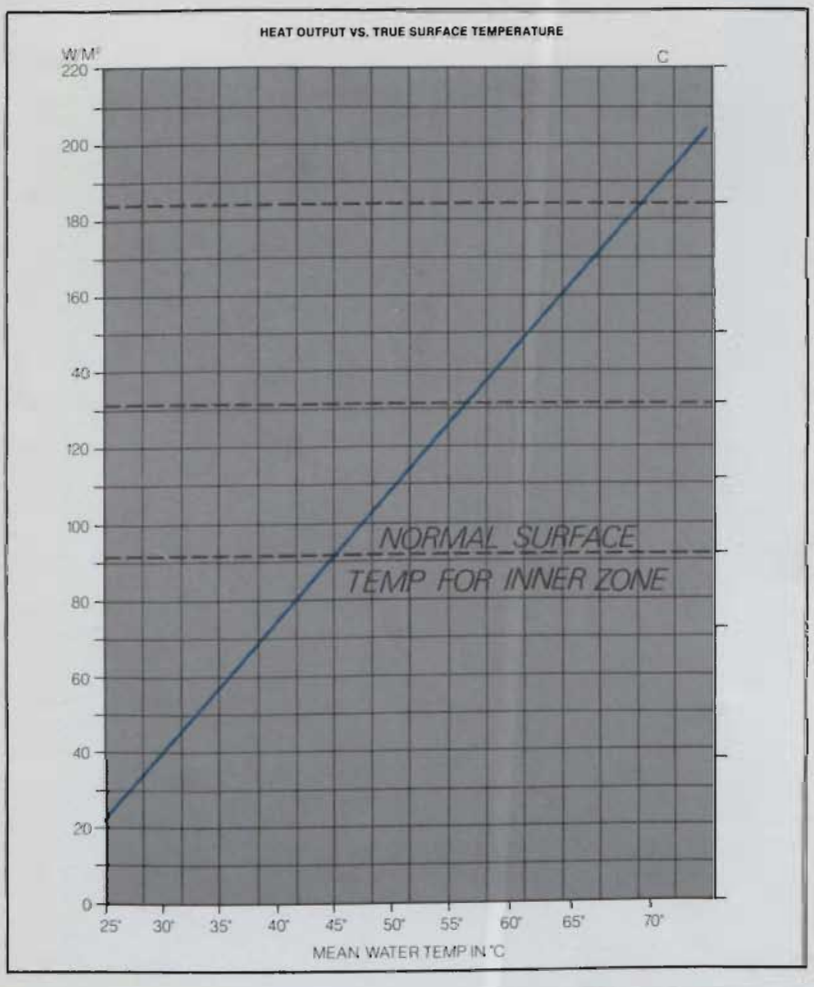
Minimum floor build up

A 30 year warranty is given against failure of the MULTIBETON pipe. The first 10 years covering full consequential loss up to £400,000. The next 20 years covering replacement of the faulty pipe only.





STATUTORY APPROVALS

MULTIBETON has an agrément certificate and is approved by the National Water Council.

MULTIBETON FLOOR SCREED

To ensure MULTIBETON's efficiency, strict attention must be paid to the floor screed system. Expanded polystyrene board is used below the polypropylene pipe to prevent excessive downward heat loss. It must also be used at upstands to prevent heat transmission into walls. The board, of minimum standard density, is laid close-fitted and covered with a damp-proof membrane – normally polythene sheet 0.046 mm minimum thickness. Bituminous or similar materials must not be used in conjunction with polystyrene. The minimum thickness of expanded polystyrene board should never be less than 20 mm and it must be borne in mind that it may have to sustain the floor loads. Point loads greater than 130 kg/m² should be avoided when using SD grade polystyrene board. For loads in excess of this, other grades to BS 3837: 1977 will be necessary; otherwise point loads should be spread using bases.

SCREED MIX

The screed itself should be made up in the following proportions and include MULTIBETON screed additives:

1 part zone 3 concrete sand,
1 part 3-2mm grit,
1 part 5mm crushed grit.
Sand,aggregate to Cement ratio 1m³ to 300kg cement.
Water/cement ratio 0.35–0.45

Screed thickness should generally not be less than 70mm overall.

RESPONSE TIMES

Underfloor heating systems are characterised by a long response time and a relatively low temperature output. The response time is compensated for by the flywheel effect of the floor's thermal mass. The floor covering will affect the heat emission and response time of the system. Most types of floor covering can be used, the main exception being foam-backed carpets. Installations exist with parquet, felt carpets, stone floors – such as slate and marble slabs – and PVC floor tiles.

For more information and costings contact

MULTIBETON (UK) LTD

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MULTIBETON
Underfloor Heating

Multibeton (UK) Limited

Warm water underfloor heating systems

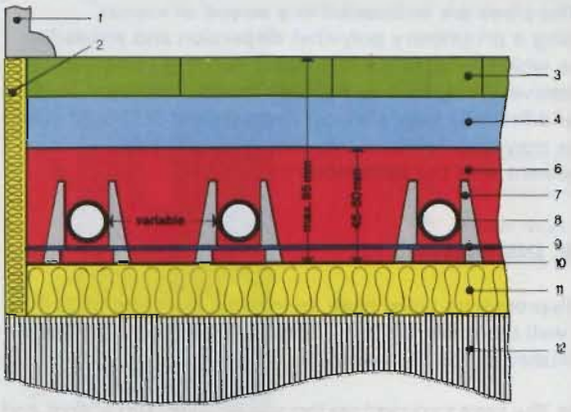
April 1983

A low temperature warm water underfloor central heating system, developed in West Germany for use in domestic, commercial and public buildings to provide a comfortable even distribution of heat.

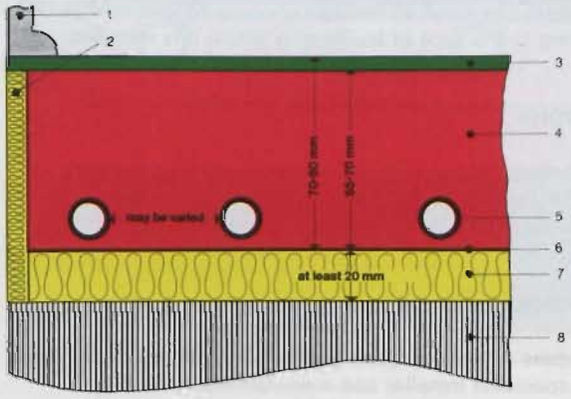
GENERAL

Introduction Warm water supplied by a conventional low pressure boiler, which may be fired by gas, oil or solid fuel, is circulated by pump via a distribution manifold to individual room underfloor heating circuits. These consist of 13 mm internal diameter Multibeton polypropylene pipes embedded in a specially formulated Multibeton cement or mortar floor screed and extend over the full floor area. The floor screed is insulated from the sub-floor and structure to improve the thermal response of the system. Variable spacing of the pipe layout within the floor screed gives the designer freedom to compensate for potential cold zones and to make allowances for the thermal conductivity of the required floor finish, in order to achieve optimum conditions. Manual or automatically controlled flow and return valves at the distribution manifold regulate the temperature of individual room circuits and the complete system can be under the control of an external temperature detector.
The Multibeton system can be installed in existing buildings provided that the additional standard 70 mm depth of screed is acceptable in relation to ceiling height.

Applications The system has been successfully used in low, medium, and high rise blocks of flats, houses, old people's homes, health centres, hospitals, schools, churches, factories, gymnasia, hotels, restaurants and airports.
It has also been used in special category projects such as swimming pool surrounds, ramps, football pitches and greenhouses. The manufacturer should be consulted however, if the system is being considered for projects of this type.

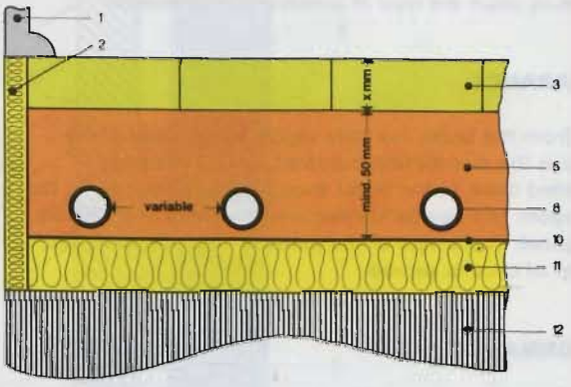


NB In room areas less than 6 sq m the steel mesh is not necessary



Key 1

1 Skirting board
2 Perimeter insulation
3 Floor covering
4 Multibeton screed
5 Flexible pipe
6 Bituminous felt or pvc sheet
7 Insulation slab
8 Concrete floor



Key 2

1 Skirting board
2 Perimeter insulation
3 Stone slab floor covering
4 Standard mortar
5 Multibeton mortar
6 Multibeton rough rendered screed substrate
7 Fixing clips
8 Multibeton pipe
9 Steel strip
10 Bituminous felt or pvc sheet
11 Insulation slab
12 Concrete floor

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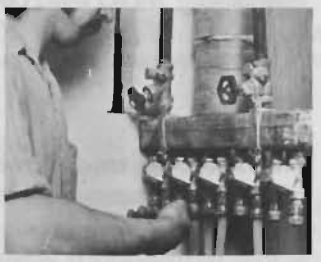
DOI: 10.21427/D7FD6N

Multibeton (UK) Limited
Warm water underfloor heating systems

1 Perimeter insulation laid to prevent sound and thermal bridging

2 Impact sound proofing and thermal insulation slabs laid on concrete floor

3 Bituminous felt or pvc membrane



4 Circuits connected to manifold and primed with hot water

5 Flexible pipe laid in base plate clips

6 Fixing clips set at predetermined intervals

7 Multibeton screed to prescribed depth

8 Heater circuits adjusted to predetermined flow volumes

COMPOSITION, MANUFACTURE

The pipes are made from a specially formulated temperature resistant stabilised polypropylene designed to give flexural strength and durability, withstanding temperature and pressure changes throughout the life of the building in which it is installed. The material is manufactured in West Germany under strict quality control, with batches fatigue-tested to DIN 8078. The pipes are embedded in a screed or mortar containing a proprietary polyvinyl dispersion and emulsifier additive which ensures the necessary bending and compressive strengths, thermal distribution, adhesion to the pipes and finished floor surface. Electrical conduits and other services may be integrated into the screed by prior arrangement with the installation contractor.

SHAPE, DIMENSIONS

The polypropylene pipes have an internal diameter of 13 mm with a wall thickness of 2 mm. Screed thicknesses for typical floor finishes are as illustrated.

Weight The load imposed on the sub-floor by the screed and fully primed system varies from 160 kg/m² to 170 kg/m² depending upon the type of construction employed.

APPEARANCE

Apart from the boiler the only visible component of the system is the distribution manifold. This is normally positioned close to the boiler though not necessarily in the same room and can be housed unobtrusively in a 120 mm deep panel. The length of the panel is determined by the number of circuits served.

PERFORMANCE

Fire The fire resistance of the structural sub-floor is increased by the additional thickness of the Multibeton screed.

Corrosion The use of Multibeton pipes eliminates the possibility of corrosion in inaccessible parts of the installation.

Thermal insulation The thermal insulation below the screed is an integral part of the system. The thickness of insulation materials specified is calculated to suit type of sub-floor construction and the specified floor finish.

Thermal conductivity Allowance is made for the thermal conductivity of the specified floor finish during the planning of the installation, in order to achieve the required room temperatures. The majority of floor finishes can be used with the system including carpets, pvc tiles, parquet, stone and any floor covering which has a maximum thermal resistance of 0·18m² h deg/cal or 0·15 togs.

Sound insulation The sub-floor thermal insulation and damp proof membrane used in the construction can provide an impact sound reduction which satisfies the requirements for grade one sound insulation to BRE Digest 103: 1969 and to provide adequate resistance to transmission of impact and airborne sound as required by the Building Regulations 1976 part G and Building Standards (Scotland) (Consolidation) Regulations 1971, part H.

Energy conservation A typical Multibeton installation operates with a mean water temperature of approximately 50°C to produce a floor surface temperature of 24°C. The comparatively low operational temperatures which can be used with the Multibeton system mean that under suitable conditions alternative sources of energy may be utilised including heat pumps, solar panels and other energy recycling equipment. Compared with heating by conventional methods the system can result in savings of up to 33% in energy costs according to the type of building in which it is installed.

SITEWORK

Installation Design and installation work is undertaken by specialist heating contractors under contract to the manufacturer and supported by computer design facilities.

ECONOMICS

Guarantees A five year joint guarantee is offered to the client by the specialist installer and manufacturer, covering materials, workmanship, and design.

Multibeton (UK) Limited
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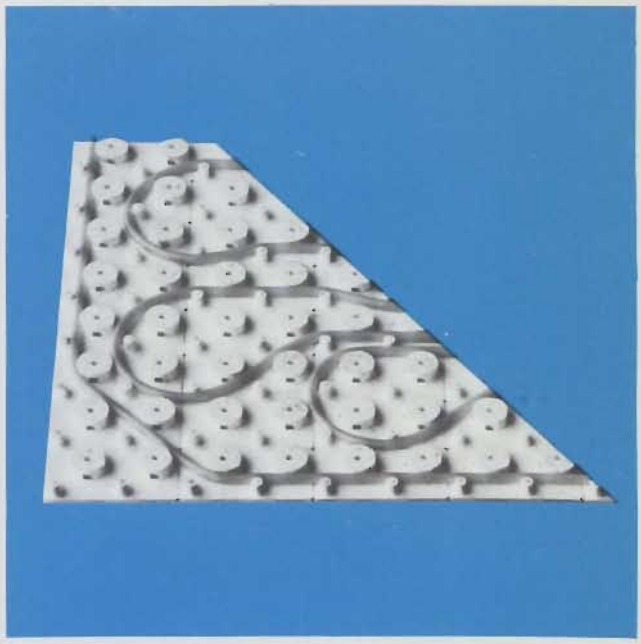
MULTIBETON
Underfloor Heating

Multibeton (UK) Limited

Multibeton dry section warm water heating system

A low temperature warm water heating system, designed for use in domestic, public and commercial buildings as a wall or floor heating system to provide comfortable even distribution of heat with low weight.



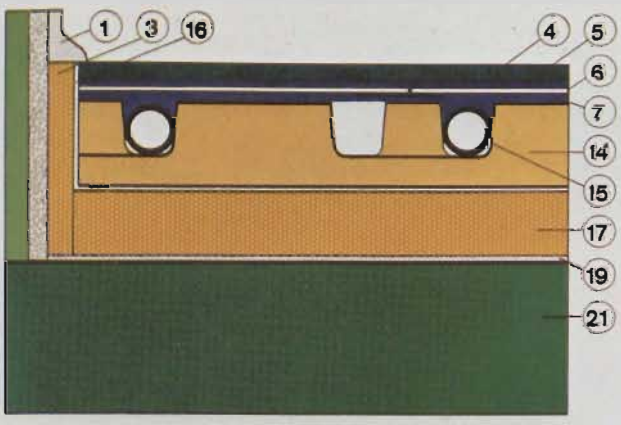
GENERAL

Warm water supplied by a conventional low pressure boiler or heat pump is circulated by pump via a distribution manifold to individual areas circuits. These consist of 13 mm internal diameter Multibeton polypropylene pipes set in a special base plate. The base plate is made of extruded polystyrene, which secures the pipes in position and provides thermal and foot fall insulation. A steel plate is fixed to the surface of the base plate to provide a strong floor surface. Alternatively the base plate may be fixed to the wall covered with expanded metal and plastered to form a low temperature wall panel. The Multibeton dry floor system is only 28 mm thick and weighs approximately 14kg/m².

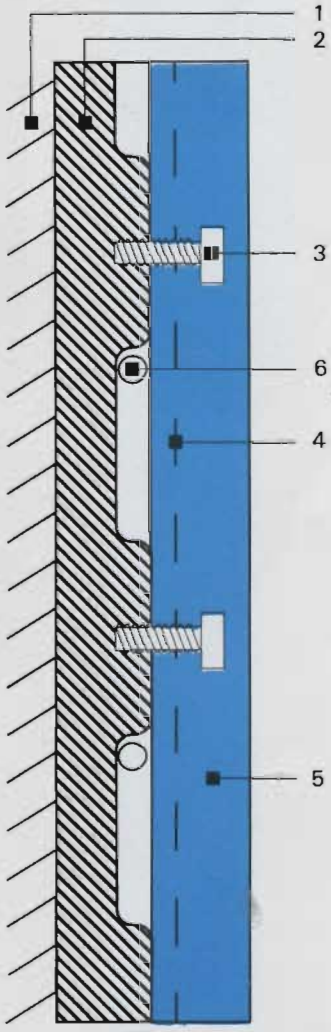
Applications: The Multibeton dry floor system may be used successfully in retro-fit projects of all types.

COMPOSITION, MANUFACTURE

The pipes are made from a specially formulated temperature resistant stabilised polypropylene designed to give flexural strength and durability, withstanding temperature and pressure changes throughout the life of the building in which it is installed. The material is manufactured in West Germany under strict quality control, with batches fatigue-tested to DIN 8078.



1	Skirting	14	Multibeton base plate
3	Edge insulation	15	Multibeton pipe
4	Floor covering	17	Extra insulation if required
5	Steel plate	16	PVC membrane
6	Adhesive	19	PVC membrane
7	Steel plate	21	Structural floor



1 Wall
2 Multibeton Base plate
3 Multibeton plastic screw
4 Expanded metal
5 Plaster finish
6 Multibeton pipe

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DOI: 10.21427/D7FD6N

Multibeton Floor Heating **Multibeton Wall Heating**

SHAPE, DIMENSIONS

The polypropylene pipes have an internal diameter of 13 mm with a wall thickness of 2 mm. Thicknesses for typical floor finishes are as illustrated.

Weight: The load imposed on the sub-floor by the screed and fully primed system varies from 14kg/m² depending upon the type of construction employed.

APPEARANCE

The only visible component of the system is the distribution manifold. This is normally positioned close to the boiler though not necessarily in the same room and can be housed unobtrusively in a 120 mm deep panel. The length of the panel is determined by the number of circuits served.

PERFORMANCE

Corrosion: The use of Multibeton pipes eliminates the possibility of corrosion in inaccessible parts of the installation.

Thermal insulation: The thermal insulation is an integral part of the system. The thickness of insulation materials specified is calculated to suit type of sub-floor construction and the specified floor finish.

Thermal conductivity: Allowance is made for the thermal conductivity of the specified floor finish during the planning of the installation, in order to achieve the required room temperatures. The majority of floor finishes can be used with the system including carpets, pvc tiles, parquet, stone and any floor covering which has a maximum thermal resistance of 0.18m²h deg/cal or 1.5 togs.

Sound insulation: The sub-floor thermal insulation used in the construction can provide an impact sound reduction which satisfies the requirements for grade one sound insulation to BRE Digest 103: 1969 and to provide adequate resistance to transmission of impact and airborne sound as required by the Building Regulations 1976 part G and Building Standards (Scotland) (Consolidated) Regulations 1971, part H.

Energy conservation: A typical Multibeton installation operates with a mean water temperature of approximately 50°C to provide a floor surface temperature of 24°C. The comparatively low operational temperatures which can be used with the Multibeton system mean that under suitable conditions alternative sources of energy may be utilised including heat pumps, solar panels and other energy recycling equipment. Compared with heating by conventional methods the system can result in savings of up to 33% in energy costs according to the type of building in which it is installed.

SITEWORK

Installation: Design and installation work is undertaken by specialist heating contractors under contract to the manufacturer and supported by computer design facilities.

ECONOMICS

Guarantees: A 10 year joint guarantee is offered to the client by the specialist installer and manufacturer, covering materials, workmanship, and design. A further 20 years guarantee is also offered on the Multibeton Pipe.

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